

THIRD SERIES VOL 63 NUMBER 1

NOVEMBER 1955

# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 • TWO SHILLINGS AND SIXPENCE



*The Treasury of the Athenians at Delphi. From a water-colour drawing by Richard Leacroft [A]*

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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY-THREE NUMBER ONE  
66 PORTLAND PLACE LONDON W1 TELEPHONE LANGHAM 5721-7

TWO SHILLINGS AND SIX PENCE  
TELEGRAMS: RIBAZO WESDO LONDON

NOVEMBER 1955

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## American Honorary Corresponding Members

Mr. Clair W. Ditchy, Immediate Past President of the American Institute of Architects, and Mr. Edmund R. Purves, Executive Director, have accepted the Council's nomination for election as Honorary Corresponding Members.

## Direct Election to the Fellowship

On the recommendation of the Royal Australian Institute of Architects, the following have been elected to the Fellowship of the R.I.B.A. under the provisions of the Supplemental Charter of 1925: Mr. W. T. Haslam and Mr. K. M. Yelland, both Past Presidents of the South Australian Institute; Mr. J. M. Collin, Past President of the Queensland Chapter of the Royal Australian Institute, and Mr. B. L. Dechaineux, Past President of the Tasmanian Chapter.

## Exhibition: The Preservation of Historic Buildings

An exhibition dealing with the technique of the repair of ancient buildings, entitled 'The Preservation of Historic Buildings', is to be opened at the R.I.B.A. by the Minister of Works on 9 December and will be open until 22 December. Prepared by the Ministry of Works it illustrates the methods developed and employed by the officers of the Ministry in this field. It is intended specially for architects and illustrates techniques for dealing with stonework, brickwork, timber, ironwork, plaster, painted plaster, etc.

## Conference on Training in the Building Industry

Arising from the report of the Joint Committee on Architectural Education, a one-day Conference on Training is to be held at the R.I.B.A. on 31 January next. Arrangements are being made by the Joint Consultative Committee of Architects, Quantity Surveyors and Builders. The chairman is Mr. Harvey Frost, O.B.E., President of the National Federation of Building Trades Employers. The principal speakers will be Mr. D. H. McMorran, A.R.A. [F], Mr. W. James, F.R.I.C.S., and Mr. D. E. Woodbine-Parish, F.I.O.B.; they will speak from the viewpoints of architects, surveyors and builders respectively. Among organisations being asked to send representatives are The Ministry of Education, The Ministry of Works, The Institution of Structural Engineers, The Institute of Builders, The National Federation of Building Trades Operatives, The Association of Principals of Technical Institutions and the Association of Teachers at Technical Institutions. Attendance is by invitation only.

## Revision of the R.I.B.A. Bye-laws

A Special General Meeting is to be held at the R.I.B.A. on Tuesday 20 December at 6 p.m. to consider the Council's recommendations for the revision of the Bye-laws, resulting from the report of the Committee on the Constitution of the Council which was published in the JOURNAL for May 1955. The existing Bye-laws which are affected by the recommendations together with the proposed revisions are published on pages 28-30 of this JOURNAL.

A resolution will be proposed which, if carried, will be submitted for confirmation to a further Special General Meeting to be held on Tuesday 10 January 1956.

## R.I.B.A. Standard Form of Building Contract

The Joint Contracts Tribunal gives notice of a general revision of the R.I.B.A. Standard Form of Building Contract.

Architects, surveyors, solicitors, builders and specialists, and all others concerned with building contracts, whether corporations, associations, or individuals, are invited to submit observations upon the working of the R.I.B.A. Standard Form of Building Contract and suggestions for its improvement. Such observations and suggestions should be directed to matters of principle and expressed in general terms, but so far as possible reference should be made to the clause or clauses in the form of contract to which they relate. The Tribunal proposes to begin this general review early in the New Year, and those interested should send in their observations and suggestions by 29 February 1956 to The Joint Secretaries, The Joint Contracts Tribunal, 66 Portland Place, London, W.1.

The bodies represented on the Joint Contracts Tribunal are: The Royal Institute of British Architects, The National Federation of Building Trades Employers, The Royal Institution of Chartered Surveyors, The Association of Municipal Corporations, The County Councils' Association, The London County Council, The Urban District Councils' Association, The Rural District Councils' Association.

## R.I.B.A. Bronze Medal. The Northern Architectural Association

The award for the three year period ending 31 December 1954 in the area of the Northern Architectural Association has been made in favour of the Design and Research Building for C. A. Parsons and Co., Heaton Works, Newcastle upon Tyne, designed by S. W. Milburn and Partners (S. W. Milburn [F], D. Foster [A], R. W. Anderson [A], T. D. Spence).



### The R.A. Exhibition of Portuguese Art

Portugal has been an ally of England since 1373 and always since then there has been trade between the two countries, notably in wine and wool. Yet until now very little has been known in Great Britain about Portuguese art. Of Portuguese architecture, English architects are almost totally unaware. The R.I.B.A. Library contains only one book of consequence on it—W. C. Watson's; Professor Richardson and Professor Corfiato devote a few pages to it in *The Art of Architecture* but Sir Banister Fletcher ignores it entirely. Yet the briefest glimpse at the small South Room in the Royal Academy's current exhibition will reveal that Portuguese architecture is anything but negligible. Here will be seen some fifty fine photographs of Portuguese architecture of all periods which hold the attention by reason of the strength and charm of the buildings they illustrate.

As with all national architectures the great international influences of the Romanesque, Gothic, Renaissance and Baroque are apparent. But in spite of this the buildings have a strongly national flavour. Few of them could be mistaken for Spanish. For example the Manueline style (1495–1521) is totally dissimilar from the contemporary Plateresque style of Spain.

Perhaps Portugal's most individual contribution to the art of architecture, and the one best known to British architects, is represented by the wall tiles known as *azulejos*. Although there are only a few small examples in the exhibition this method of covering whole wall surfaces with patterned or pictorial tiles is, by way of the direct inheritance of it in Brazil, now beginning to exert a strong influence on modern architecture.

From our point of view it is regrettable that the Press arrangements for the exhibition did not include the supply of copies of the photographs of Portuguese architecture which were on view.

### Professor H. O. Corfiato

Professor H. O. Corfiato, F.S.A., S.A.D.G. [F], has received the distinction of Chevalier de la Légion d'Honneur.

### The York Institute of Architectural Study

The Minister of Works is to open on 16 March 1956 the new headquarters of the York Institute of Architectural Study which was illustrated in the August JOURNAL.

The 1956 programme of the Institute's activities retains the old courses and adds some new ones. A conference on Architectural Office Management (6–10 January) has been arranged as a result of opinions expressed at the Harrogate Conference; its purpose is to discuss the problems involved in office management and to provide guidance for future courses on the subject. Courses of special interest to architects are: Modern Techniques in Timber Construction (6–10 April); Protection and Repair of Historic Buildings (11–20 April); Housing Improvements and Conversions (6–11 September); Townscape (13–18 September). The foregoing activities have the support of the Ministry of Housing and Local Government, who state that if the attendance of an officer would be of value to an authority the question of expenditure is a matter for the decision of the District Auditor.

In addition there are courses primarily for architectural students and laymen. The summer school for measured drawing work and the study of architectural history (28 July–11 August) and a course on Landscape Design (23 July–11 August) are primarily for students. For laymen there is a short school on The Evolution of the Small House and Cottage (23–28 July), a course on A History of English Architecture (11–18 August) and, in co-operation with the National Trust, a school for American visitors (16–22 July) on The Historic Houses of Great Britain.

Prospectuses of courses can be obtained from The Secretary, St. Anthony's Hall, York, until 1 March; after that date from The Secretary, The York Institute of Architectural Study, Micklegate, York.



From the R.A. Exhibition of Portuguese Art. The Templar's Church at Tomar. A detail from 'The Beheading of St. John the Baptist' by Gregorio Lopes (c. 1530–40).

### Works of Art in the House of Commons

A committee of members of Parliament reports that the House of Commons art collection 'is sadly lacking in works of character and artistic merit'. This is hardly surprising; Barry's building was erected at the nadir of Victorian representational art and since that time additions generally have been by the safer and stodgier painters and sculptors. The committee recommends the establishment of a fund of £10,000 to commission or purchase works of art, to be controlled by the Minister of Works with an advisory committee of members. While most of the existing murals should be retained, the committee recommends that those which have perished should be covered by new murals on detachable panels; some of the existing oil paintings should be cleaned and rearranged, and possibly given individual lighting.

### Joint Meeting of R.I.B.A. and I.E.S.

A joint meeting of the Royal Institute and the Illuminating Engineering Society will be held at the Lighting Service Bureau, 2 Savoy Hill, London, W.C.2, on Tuesday 13 December at 6 p.m. A paper on 'Lighting in Buildings—Training and Practice' will be delivered by Mr. Derek Phillips [A] and will be followed by general discussion.

### Planning for the Crippled

The Central Council for the Care of Cripples is to hold a conference in London in April next to discuss the problem of providing suitable accommodation for the severely disabled. A committee of the Central Council have published an interim report entitled *Housing and Accommodation for the Disabled* but say they are aware that their evidence is incomplete and inaccurate; hence the proposed conference. Further information can be obtained from the Secretary, Central Council for the Care of Cripples, 34 Eccleston Square, London, S.W.1.

### R.I.B.A. Diary

MONDAY 28 NOVEMBER. 6 p.m. Library Group Meeting. *The Architecture of Islam with special reference to Egypt*—Frank Scarlett [F].

TUESDAY 6 DECEMBER. 6 p.m. General Meeting. *Brompton, London's Art Quarter*—H. S. Goodhart-Rendel [F].

FRIDAY 9 DECEMBER—THURSDAY 22 DECEMBER inclusive. Exhibition—*The Preservation of Ancient Buildings*. Mon. to Fri. 10 a.m.—7 p.m. Sat. 10 a.m.—5 p.m.

MONDAY 19 DECEMBER. 6 p.m. Library Group Meeting. *Vitruvius on Public Architecture*—W. A. Eden [F].





# The President's Inaugural Address

Mr. C. H. Aslin, C.B.E.

Given at the R.I.B.A., 1 November 1955

The Hon Secretary, Mr. E. D. Jefferiss Mathews, O.B.E. [F]: I have to make a disappointing announcement before calling upon the President to speak. We had hoped that Mr. Ralph Walker, Past-President of the American Institute of Architects, would attend this meeting to present to our President the certificate of Honorary Fellowship of the American Institute of Architects. Unfortunately we had a cable yesterday from Mr. Walker regretting that he was unable to come here and expressing his deep apologies to the President and to the meeting.

**The President:** This Inaugural Address which by custom it is the duty of the President to make appears to me to have changed in intent in the last decade. In the past it almost took the form of a lecture by the President on some established form or period of architecture.

The Royal Institute and the profession, like everything else in this technical age, have changed and continue to change rapidly, and it might be desirable to say something about the state both of architecture and architects.

Up to the 19th century architecture appears to have progressed slowly on an even keel from period to period, though perhaps the keel looks more even, regarded from this distance in time, than it was in fact, and I have no doubt that architects had more than their share of trials and tribulations than can possibly be determined by an examination of their works down the centuries. In the 19th century the profession appears to have decided that architecture was a finite art which had reached its peak on two separate occasions—the first one in Ancient Greece and the second in the Early English period of the Gothic. There appeared, therefore, nothing to do but to use the best decorations of these periods as a pattern with which to embellish banks, railway stations, town halls, hospitals and other public buildings, and architectural discussion and dissension appeared only to circle around views as to which of the two great periods was the more appropriate to use in an industrial age. This idea was fostered by Ruskin, who held and promulgated the notion that architecture was an addition of a variety of kinds of ornament to an otherwise plain structure; which structure, in his view, was building and not architecture.

There have been signs during the present century that the 19th century view is not held universally, but on the other hand no set course has been visible; and though it is always unwise to prophesy, it appears that at the moment it is possible to see the emergence of an architecture which repre-

sents this century. In the past one hundred odd years, buildings appear to have been designed generally from the exterior to the interior, the first aim being to make a monumental structure, and afterwards to fit in the internal requirements of the client. During the past half-century this process seems to have been reversed, the first claim on the architect's ingenuity being to produce a plan for whatever building was required which would prove to be suitable for the enjoyment and satisfaction of the occupiers, and to give the best possible amenities which would enable the occupants to carry out their duties to the best advantage.

The view appears to have been held in some quarters that a functional design which satisfied the demands of the client, and with particular attention to economics, necessarily produced architecture. This view appears to me to be erroneous. There seems no doubt that close attention to function and cost which involves the speed of building is essential, but a good deal of attention to the aesthetic side of the programme is required, and I think that at this moment the architect recognises the aesthetic side of building has to some extent been crowded out by the necessity to concentrate on new techniques; and that from now on, having arrived at the point where modern techniques are more closely understood, his next major effort will be to provide a satisfactory aesthetic answer within the present framework. At any rate this picture appears to be accurate, and one hopes that in the next few years an appropriate modern outlook will be firmly established, and that the second half of the 20th century will produce architecture as satisfactory to its environment and conditions of production as that embarked upon by our predecessors.

Some members of my audience will be aware that on other occasions I have mentioned these matters before, but I am so convinced that they are of vital importance to architecture and those who engage in it that I hope I shall be forgiven for putting further emphasis on this problem. The pattern of architecture appears to me to be being resolved, and the changes which are responsible for this movement are also taking effect in the pattern of training and work of the architect himself. At the beginning of this century the profession was divided into two clear parts. The first part consisted of qualified architects, and by 'qualified' I mean members of the R.I.B.A. who ran practices. The second part consisted of the bulk of architects who were assistants whose whole time was spent, not in designing, but in providing a pattern of helpers who worked solely on the

problem of supplying assistance to the schemes inaugurated by the senior members of the profession. Since that time two major alterations have taken place. The first is that the bulk of men and women entering the profession do so through the increased number of schools of architecture which have come into being. The second is that owing to Government policy, which now controls a large part of the industry, large national and local government departments have been formed and the total number of architects employed in these offices is probably at least as great as those occupied in private practice.

With regard to the first change in training, almost all new architects are fully qualified in the sense that they are trained to perform all the duties of an architect as their seniors are, in the same way as a student who will ultimately go into private practice or run a public office, and therefore the old method of using the bulk of the profession as assistants is no longer valid. The only point at which the new architect lags behind his senior is in the lack of experience. It is evident that all young architects cannot hope to obtain one or other of the various senior posts either in local government or private practice, and therefore it seems to me to be clear that the structure of the profession must be varied to allow the kind of employment which will take full account of the qualities and training of the architect who formerly was looked upon as a permanent assistant.

I am of the opinion that private practice must always be sustained, and that is why some of us in local government employment have supplied the private practitioner with as much work as is possible, so that he will be available when more private money is available for doing those things where the money is not supplied by the national government. If this course of encouraging private practice is not pursued properly there is a danger that we shall reach a point where all architecture and building is nationalised, and this I think would be a disaster for the profession.

This gradual change in the structure of the profession has resulted in many young men demanding that something different shall be done on their behalf and it will be remembered that quite recently the Royal Institute was faced with the demand that it should undertake trade union activities. It has been clearly shown however that the R.I.B.A. cannot function as a trade union, either under its existing or any future constitution. However, that does not mean that nothing shall be done to meet the quite legitimate request of our many members in salaried employment. Members will be

aware that in July the Council set up an *ad hoc* committee under the chairmanship of Mr. Richard Sheppard, representative of every section of the profession, to look into this problem in particular and into the state of the profession as a whole. I understand that the committee will be presenting some interesting proposals at an early date. While I cannot anticipate the report of the committee or what the Council will decide when they receive it, I hope it may be possible to take such steps as will satisfy the whole body of architects and the interests of architecture, and that the profession will be able to marry more closely in with the changing conditions—I say 'changing', as although we are aware that many vital changes have taken place in the structure of the profession in the last 40 years, it is reasonably certain that such changes will continue for some time to come.

One of the most important things we must do is to improve the quality of the work produced by all architects. Some people are wedded to the idea that if we could get complete registration, so that all buildings would, by law, be designed by architects, we should be in a very strong position, but there is nothing in that proposal which would guarantee the production of better architecture; indeed, some time ago we found upon enquiry from a large number of countries and Commonwealth states that at the present moment in the countries which it would be generally agreed produced the best work there was the least protection. We do not want a situation where the public is compelled to employ an architect, but wish to arrive at one where the public will so clearly recognise the virtues of architecture that they will themselves always approach an architect for any kind of work they have in mind.

Most of my friends who are not in the profession might possibly have come here to enjoy a talk on some interesting and pleasant aspect of architecture, and I offer them apologies for taking up their time in mentioning the difficulties which at present surround architecture as an art and as a profession.

Whether you automatically think of architecture as art which has produced lovely examples of design within the last many centuries, or as a profession which is producing modern buildings for all kinds of purposes and may be producing works of sufficient quality which may be properly classed as architecture, you may be assured that in this peculiar and changing world the architect in his dual capacity is strangely bemused by the many changing currents which frequently cross his path.

Our lay friends who have done us the honour of coming here tonight can be assured that they are not wasting their time, because the profession of architecture is most heavily indebted to its patrons. Without their support and demands I am satisfied that it is not possible to produce architecture. When one is young it is possible to believe that the perfect architectural conception can be produced by

flat sites presenting no trouble, no limited brief, and vast quantities of money. This however is untrue, and you need a patron with exacting demands, an irritating site and an acute shortage of money, and more than that the stimulation which a good patron supplies, which makes the architect produce his best work.

In spite of many difficulties, some of which I have outlined, it is certain that the prime duty of this Institute is to concentrate on producing by its members good architecture in every building entrusted to us, whether that building be tiny or large. All the other desirable and indeed essential things such as pay and conditions will follow easily, as the patron recognises the quality he is getting for his money. When I say 'will follow' easily or automatically, I do not mean that they will come without any effort on our part, but I am sure that the first thing to do is to deserve them.

## VOTE OF THANKS

**Mr. David Bowes-Lyon:** I do not imagine that I have been given the honour of proposing this vote of thanks to your President for his Address because I am in any way an authority on architecture or on that great profession to which I suppose so many of you belong. I know nothing at all about it. There is however a very good reason for my having been selected to propose this vote of thanks, namely that your President and I hail from the same county. It is a matter of great pride to us in Hertfordshire to see Mr. Aslin occupying the high position which he does occupy in your great Institute, and we should also like to congratulate the Institute on its wisdom in having come into the byways of Hertfordshire to find itself a President.

We have listened to the President's Address with very great interest. As a layman, I was particularly interested in his statement that he thought an architecture was emerging which would be known as the architecture of the twentieth century, and further that he thought it would compare favourably with the architecture of the previous century. I hope that will be so. Although I am a layman in this matter, I watch with intense interest the planning and the building which are going on everywhere, and I still hope to see something which I shall find really pleasing to the eye. I must confess that I am a dyed-in-the-wool traditionalist as far as architecture is concerned.

My work takes me from the City to the West End three or four times a week, and during the last three or four years I have watched with great interest all the new buildings going up in the blitzed areas. There is one particular building which I know quite well. I might almost say that we are friends, if it were not that I dislike it so much. It is a very large building, on a site immediately east of St. Paul's Cathedral. I must confess that to me, as an admirer of traditional architecture, it looks like the largest public convenience that I have ever seen.

I really do not envy the lot of architects

now, because I think their profession must be one of the most vexatious professions to be working in. It seems to me that you have to be fairly astute lawyers, you certainly have to be competent economists, and I suspect that if you want to get away with your plans you have to be pretty good politicians. Having mastered all those subjects you can I presume get down to the drawing-board and do a real bit of architect's work.

I should like to conclude by thanking the President very much for the excellent Address that he has given us, and I should like to wish him all good fortune during the remainder of his term of office as President of this great Institute.

**Sir William Acland:** It is always much more difficult to second any formal resolution than it is to move it, especially when the proposer has just said nine-tenths of what one was going to say oneself. I have listened with the very greatest pleasure and much real interest to the President's Address, but I feel it incumbent upon me, for the benefit of the audience rather than the President, to make one or two fairly serious criticisms.

The President referred to the history of this Royal Institute, but I would point out that it is quite a baby. I have no doubt that in his previous incarnation the President was consulting architect to a gentleman whose name I cannot pronounce but which started with 'Tut'. He lived in the Middle East and he built one or two things which remain to this day. The President seems to have recovered from that origin, and has been with us in Hertfordshire, doing extremely important work, for the last ten years. He has learned a great deal since his early days in Egypt, and he has had what I consider to be a brainwave. His buildings do not look like public conveniences at all; they look like greenhouses. They are what an irreverent person like myself calls the pre-fab, light-hearted, light-construction type of building. I refer to the schools which the President has designed and by which he has set an example to the rest of England and to the world. I think that I may take a great deal of the credit for them, because I have lived in Hertfordshire longer than the President has. There is no other reason, of course.

I should like to say something to this audience, to which perhaps the President and his wife should avoid listening. I asked a capable young architect who for some time worked at County Hall under the President's orders what he thought about the President. He had been a soldier, and he said to me: 'Do you know what a good C.O. is, Sir? If you want to find a really good C.O., go to Aslin. He is the very best person to train a young architect, not to keep him tied down to dull work if he can do better, to encourage him, and cheerfully to let him go out of his own office, just at the time when he is being most useful, to start as a private architect.' Further, this architect told me that the President would give a young architect a chance to do private work and work for

public purposes under his broad guidance, and I think that is a most estimable thing. I should say that the qualities of a good C.O. might be described as experience, tact, knowledge and kindness. All those attributes the President has, and not only does he possess them but he uses them.

One criticism which I would make of the President's Address is that there was no reference in it to ladies. I venture to say that no architect ever gets on unless he has a good wife.

Finally, in seconding this motion, I should like not only to congratulate the President on his life's work and on what he is doing now but also to congratulate the members of the Royal Institute on having such an absolutely first-class President.

**The President:** I should like to thank Mr. Bowes-Lyon and Sir William Acland very much for the way in which they have proposed and seconded the vote of thanks, and you, Ladies and Gentlemen, for the way in which you have accepted it. I suppose I ought to spend some time in replying to the variety of references that have been made to large lavatories, greenhouses and all the other things that sprawl over the countryside. Sir William says that he knows nothing about them, but it is quite clear from his speech that he knows a good deal, and he probably knows that these things represent a sort of beginning, which will grow up into something real. It is that growing up which I am looking forward to in the next forty-five years. I really believe that we have started to surge ahead. It is very difficult to make any sort of prophecy about architecture, but I think we can say with confidence that architecture is on the right path today and we hope that it will go forward on that path.

Sir William accused me of saying nothing about ladies, but in fact I took great care to say 'men and women entering the profession'. I am quite sure it is not essential to have a wife who has been trained in architecture. Women have a sort of intuition which enables them to know all about architecture without having any training at all! If all architects were women all the schools of architecture would come to an end, because it would be unnecessary to train anybody. Some of my friends are rather chary about building houses for their wives. My advice is that it is best to do it quickly. It is rather like having a tooth out: it should be done as quickly as possible, to get it over. One cowardly man who is here this evening once asked me about this delicate point. He told me he thought it was better to employ another architect to build a house for one's wife, so that, when they occupied it, if she found anything wrong he could sit back and laugh, and say: 'Well, I didn't do it.' I pointed out that if he did that he would have a lifetime of misery, whereas if he did it himself, with his client's aid, he could have only twelve months of it and the rest of the time both of them would be to blame for anything that went wrong.

I am extremely obliged to Mr. David Bowes-Lyon for taking the trouble to come

here and propose this vote of thanks, and also to Sir William Acland. It was perhaps rather dangerous to invite them, because they might have said some rather rude things about me, as they clearly know more about me than some of my own colleagues do. It was very kind of them to come here and it was very kind of you, Ladies and Gentlemen, to listen to me. I am most grateful to you for the way in which you have accepted this motion.

#### PRESENTATION OF LONDON ARCHITECTURE BRONZE MEDAL AND DIPLOMA FOR 1954

**The President:** It is the practice of this Institute to present a Diploma and Medal for what is considered by a fairly effective committee to be a building of merit erected in the immediate past in a particular part of the country.

On this occasion I have the greatest pleasure in presenting the London Architecture Bronze Medal and Diploma for 1954 to Dr. J. Leslie Martin, Architect to the London County Council, for the L.C.C. Ackroydon Estate at Wandsworth.

I also have great pleasure in presenting a replica of the Medal to Mr. W. G. Fiske, the Chairman of the L.C.C. Housing Committee, as representing the building owners.

**Dr. J. Leslie Martin, M.A. [F]:** I am, of course, very honoured indeed to receive this medal. I am particularly glad to receive it from you, Sir; a distinguished fellow County Architect: the leader of a group of architects whose work we in the L.C.C. have long admired: and, I believe a Bronze Medallist of your own county of Hertfordshire.

I cannot help feeling how fortunate it is for us that county boundaries prevent you from being one of our competitors. But Sir, what a partnership we could set up if ever Hertfordshire decided to move in and expand the London County Council.

But I want to say especially how very glad I am that it should be the Ackroydon Estate that has received this award. Because, of course, the Ackroydon Estate was, so far as we were concerned, a pioneering scheme. The lovely well-treed gardens in which we were to build (and where Paxton himself had designed a layout) were in themselves a challenge. It was quite clear that the solid building up of ground space by five-storey flats was not the answer. The idea of mixed development grew up—of grouped arrangements of different forms of dwelling. We introduced the point block that could stand between the trees: this in turn gave the opportunity to introduce maisonettes and houses.

Those tall blocks, the first of their kind, aroused a good deal of comment. On the one hand we were told that we were leading the world. On the other we were brought sharply back to earth by those who were quite certain that we were vandals intent on the destruction of the skyline of London. The award of the Minister's Housing Medal, followed as it is now by the

award of this Bronze Medal, is reassuring. We are delighted to think that what we have done has been considered acceptable to the distinguished body of opinion that is represented by the members of your jury.

But Sir, this medal really ought to be sub-divided into a great many parts. I receive it on the behalf of a great many people. There are so many that I have a list and I must, of course, mention straight away the people who have really done the work, my own staff. First, Mr. Whitfield Lewis and Mr. Michael Powell, who have led the Housing Division so splendidly in the last few years. I cannot mention all their supporters by name.

Those who have made a contribution to this scheme are here tonight and I thank them for the high standard that they have set. I would like to feel that it is a standard that we are maintaining in our later work and that, to that extent at least, all members of the Housing Division can feel the reflected glory of this award.

Certainly our Housing Committee must have a share of this medal. We, the technical officers of the L.C.C., see our clients practically every day—we understand each other, I hope—we share the problems that have to be solved. With Chairmen as understanding as Mr. Fiske and Mrs. Denington I see nothing but good in this collaboration. It was Mr. Fiske who, as Chairman of the Town Planning Committee, took the decisions that have led to mixed development. And if you see anything that you may regard as enlightened and progressive in our work you must thank Mrs. Denington and her sub-committee. It is this committee that has helpfully examined every single scheme that we have ever put forward. I should like to say now how much we have valued their confidence.

If I merely mention Messrs. Bylander and Waddell, the engineers, and Messrs. Frank Falkner and Partners, quantity surveyors, it is not because I underestimate their contribution. It is simply that in the minute that I have left I must say something about the builders.

We know Messrs. Tersons very well indeed. They are renowned in the L.C.C. for doing their work on time. If you examine this building at Ackroydon you will see that they combine organisation and timing with quality. I met Mr. Marchant the other day and he said 'We have done a number of schemes for you now—we like taking people back to see them because we are proud of them.' Now obviously, you don't take people back to look at your mistakes. I can therefore only draw one conclusion. I would very much like to thank the firm and all the workmen who have been associated with this scheme.

Mr. President, on behalf of all those people that I have mentioned, I thank you very much indeed for this medal.

**Mr. W. G. Fiske:** I am sure that this must be a very proud moment for Dr. Martin and for those many members of his staff who helped him to bring about this achievement. It is also a very proud moment for me, as the very recently elected Chairman



of the London County Council Housing Committee. The client at least has this satisfaction, that he chose wisely when he selected his architect, and that is perhaps the most important contribution that the client can make. It shows that a committee, which of course makes the choice of the architect, can be relied upon in these highly artistic as well as important social and technical matters to make a good choice.

I should like at this juncture to say something about working in a public office and working with committees, because I feel that there is a good deal of nonsense talked about it. Both as a public representative and as a private individual I work with architects, and I always find that, when I am working as a private individual with an architect, in the last resort I get my own way, but when I am working as a public representative with an architect I never get my own way, for the simple reason that if I put forward a proposition some other member of my committee is bound to oppose it, and when there is opposition between clients the architect of course gets his own way.

I would say to those of you who have to deal with committees that if you deal with them nicely and pliantly you will probably find that you can always get your own way.

I think that the public office is in these days an institution in the field of architecture. As long as it is prepared to remain open to new ideas, as long as it is prepared to become a general repository of experience which it is prepared to pass on to the profession as a whole (as we do at County Hall, because we employ so many architects in private practice), and as long as it is always prepared to experiment with new techniques and new forms, I think that the public office has a real contribution to make not only to architecture as an art but to architecture as a social institution.

On the social side of a project such as that which you have just commemorated, I think it would be right to mention the happiness and the co-operation of the fortunate people who now live in these buildings. It is clear from the way in which they furnish them, as also from the way in which they keep them and from the pride which they have in living in them that they are as pleased with them as is the architect and as we are ourselves.

To judge these buildings as buildings is perhaps another matter, because a great deal has been said about egg boxes and about modern building in our time. I feel that these buildings spring from the technique and from the circumstances of our time. They were designed and carried through by artists, and we who are living in this generation and in the middle of the twentieth century must abide by what our generation and our century produce. We must always look forward and not backward. That is why I hope so much that the President's opinion of what is going to happen to architecture in the next forty-five years may be amply justified.

**The President:** I am sure that you do not

want to hear any more speeches from me, but I cannot resist thanking Mr. Fiske for his very charming expression of regard for the architects who work for him. Those who are not in public practice, in the way of belonging to a local authority, need take no notice whatever of Mr. Fiske's remarks about committees. There are so many of them that their opinion must be looked upon with some sort of apprehension, but what Mr. Fiske has disclosed to us is that his committee and his architects work in close co-operation and there is entire sympathy between them. That is what produces architecture, because without the patron—the client—no architecture at all would be produced. I have constantly been telling younger men than I am that that is true, and some day they will believe it.

I would now like to ask Mr. Marchant, the representative of Messrs. Tersons, who built the Ackroydon Estate, to say a few words. I hesitate to ask him, because we have not got another medal to give him. That is one reason why we ought to adopt Dr. Martin's suggestion. We ought to have rows of medals, because every building is a co-operative achievement. We always try to stress the fact that the architect is not a demigod who produces a building by himself but that he produces a building in conjunction with a whole team of helpers.

**Mr. W. L. Marchant:** I should like to thank Dr. Martin for his very kind words.

I am indeed very much honoured to have the privilege this evening of saying a few words. I feel that the Ackroydon Estate is a first-class example of what close co-operation and understanding between the architect and the contractor can bring about, and at the same time we must not forget that most important man the operative. This contract went through, from start to finish, on a very happy basis. I should like, in that connection, to compliment the Housing Architect, Mr. Whitfield Lewis, and all the senior executives for their valuable assistance in providing all the necessary drawings and details which helped us to bring about the completion of the contract actually ahead of the schedule.

As the principal of Messrs. Tersons, who undertake millions of pounds' worth of work every year for the London County Council, I feel very strongly about further consolidating the closer co-operation between architects and contractors. I would say most respectfully to the President and the architects who are here this evening that I feel they should make more use of the down-to-earth methods of the contractors and bring them in at a very early stage, so as to obtain their opinion on economical construction.

It is my express wish that we shall continue on the lines of the Ackroydon Estate, but we cannot, of course, continue on those lines unless we receive the same co-operation as we received from the London County Council's Architects' Department. The Ackroydon Estate was a job which went with a swing from beginning to end. The architects, the engineers, the quantity surveyors, the contractors, the operatives

and the trade unions worked together with the closest possible understanding, and I do feel that, if the architects and the contractors of today proceed with the same vigour, the architects will be able to carry out their schemes with added efficiency and complete them on schedule or even ahead of schedule.

**The President:** With regard to what Mr. Marchant has said, I should like to be able to persuade my County Council to nominate the builder before we start a job. That would be perhaps a rather novel idea to put before the County Council, but I should like to get the architect, the engineer, the quantity surveyor and the builder to come together before starting a job, and to arrive at a price. I am quite sure that we should get the best co-operation from everybody concerned and learn from the builder the little tricks that he knows. Then we could get a whole body of people together before the project was designed, but I think this idea is a few years ahead.

#### PRESENTATION OF DIPLOMAS IN CONNECTION WITH THE R.I.B.A. AWARD FOR DISTINCTION IN TOWN PLANNING

**The President:** Mr. Sheppard Fidler and Mr. Frederick Gibberd were recently awarded the R.I.B.A. Distinction in Town Planning, and before I ask them to receive their Diplomas I must read the citations to you.

Mr. Sheppard Fidler, prior to his appointment as City Architect of Birmingham, was Chief Architect to the Crawley New Town Development Corporation, where he carried out a great deal of the development and was responsible for the co-ordination of the work of other architects in the development of the master plan. As City Architect of Birmingham, Mr. Sheppard Fidler is responsible for the design of the civic and educational buildings, the development of housing estates and neighbourhood centres and, in collaboration with the City Engineer, the redevelopment of the obsolete housing areas in the centre of the city.

Mr. Frederick Gibberd is the architect-planner for the new town of Harlow and has laid out and designed a considerable part of the work so far carried out. He has prepared designs for civic centres at Doncaster, Hull and Nuneaton, and he acts as adviser to other local authorities. Mr. Gibberd is the author of *Town Design*, a comprehensive work on the visual aspects of town planning, and he is part author of *Design in Town and Village*, issued by the Ministry of Housing and Local Government.

**The Hon. Secretary:** As I mentioned at the beginning of this meeting, Mr. Ralph Walker, Past-President of the American Institute of Architects, is unfortunately unable to be here this evening, but I think our President would like to say a few words in respect of the honour which the American Institute of Architects has conferred upon him.

**The President:** I attended a meeting recently whose chief speaker was ill and unable to be present. He sent what I should call a gramophone record, so someone proposed a vote of thanks to him not for his speech at the meeting, but for speaking from his bedroom. This evening I have a similar sort of task, because Mr. Walker has been unable to attend this meeting and to present to me the certificate of Honorary Fellowship of the American Institute of Architects, and I think I ought to thank the Institute for this honour, even though the

Institute is several thousand miles away. My first disappointment about this was that I was asked to go to Minneapolis to receive the certificate, and nothing would have given me greater pleasure. But architects are naturally rather impoverished people, and as Minneapolis appeared to me to be about as far from New York as New York is from London it seemed rather too far for me to go.

I should like to say, however, that I am extremely grateful to the American Institute of Architects for this honour, which I

think is rather like Dr. Martin's medal, in that it is given not to me but to the Royal Institute of British Architects, and that is a very charming fraternal idea on the part of the American Institute. I think this honour is due to the fact that American architects think that, in spite of our country being discounted in some places, we still have something of value to say to the world of architecture. I should like it to be known that I am very much gratified by this honour, which draws us a little closer to our brother architects in America.

## Rights and Duties of the Architect

*The following document was discussed and approved by the General Assembly of the International Union of Architects when it met last July at The Hague.*

*The idea of a 'contrat social' is somewhat alien to British thought and the phraseology of the document is not that which a British architect would use in defining the rights and duties inherent in the practice of architecture. Nonetheless the document may be of interest as a serious attempt by architects from all over the world (the Russian and Cuban delegations introduced amendments) to arrive at a common statement of the responsibilities implicit in the relationship between their profession and the community in general.*

*It is hoped that the document will be of especial value as a basis for the setting up of professional standards in those present and prospective members of the Union in which the profession is at present less well established than it is in most European countries.*

### RIGHTS AND DUTIES OF THE ARCHITECT

**Introduction.** The practice of architecture varies widely according to circumstances. Some architects practise as private professional men, others are to a greater or lesser extent in the service of their government or of private and public institutions, others again are responsible for the execution of their own designs. In spite of this, it seems both possible and desirable to draw up certain rules that may be universally applicable, and in so doing the I.U.A. hopes to demonstrate the unity of the architectural profession throughout the world through the promulgation of this charter as a step towards the complete fulfilment of its task.

#### The Architect's Place in the Community.

(A). An architect is one whose mastery of the art of building as an expression of life qualifies him to create and vitalise the places where men live and work. If he is to express the aspirations, and minister to the needs, of his age, he must have both knowledge and understanding of the human situation in its widest sense, while showing a constant regard for economic realities, and for all other relevant factors. He should see his work as a contribution to an overall plan into which he must introduce at every level both liveliness and orderliness. From this

point of view, architecture and town planning are seen to be complementary activities. The architect should endeavour to develop continuously in technical competence and artistic ability as well as in experience.

(B). In return it is desirable that society, recognising the fundamental nature of the architect's work, should provide such legal protection as the profession needs in order to function in a proper manner. This can be achieved either by improving existing legislation or by introducing new legislation inspired by professional ideals conformable to the aims of the I.U.A. Such legislation should be designed to establish or to define more particularly: (a) The qualifications necessary for the practice of architecture. (b) The best means of achieving a sound architectural education and of preventing the entry into the profession of unqualified persons. (c) The rules of conduct required to ensure a high moral standard for the profession. (d) The penalties to be attached to such regulations.

(C). Apart from legal enactments, national professional organisations should draw up such regulations as may serve to promote a spirit of comradeship. They should impose on their members a professional code based on the following general principles: each organisation being free to give them a narrower interpretation where it is thought desirable.

(D). Whatever the form of his practice the architect must not lose sight of the fundamental nature of his calling. Thus through his work he will contribute to the advancement of mankind.

**Rights and Duties of the Architect.** (1) The architect should place at the disposal of his client all his knowledge, experience and application in submitting proposals, in supervising works and in any help or advice he may be called upon to give.

(2) He should devote himself wholeheartedly to the interests of his client in so far as they are not inconsistent with what he conceives to be his duty to his profession nor with the interests of the community as a whole.

(3) The growth of an architect's practice should depend on merit; he should not be

permitted to advertise nor should he ever have or acquire an improper commercial interest.

(4) He should not take any action that might damage directly or indirectly a fellow architect; he should try to remain objective and courteous in criticising the work of his colleagues, and to accept criticism of his own work in the same spirit.

(5) He should not plagiarise nor depart in any way from the principles accepted by artists in their relations with one another.

(6) If he employs assistants or directs their work he should give them the benefit of his experience and help them in their efforts to reach a position commensurate with their abilities, both personally and within the framework of his professional organisation.

(7) He should retain the full copyright of his designs in accordance with international conventions and the laws and customs of his own country.

(8) His professional training should qualify him to direct and co-ordinate all the building trades, including those concerned with the prefabrication of building components and equipment.

(9) If he seeks collaboration from artists, engineers or other specialists he should define at the outset their respective rights, duties and responsibilities.

(10) He should use his moral authority to maintain harmonious relations between all those involved in the design and execution of his work, and should enable them to appreciate something of its intention and the spirit in which it has been conceived.

(11) He is entitled to a fair and proper reward for the services he renders, in the form of a fee or salary, to the exclusion of any commission or profit, this principle being taken to cover the value to the community of all original ideas.

If he collaborates with industry in the development of new processes or methods of construction he is equally entitled to remuneration in accordance with scales to be determined by the national organisation.

(12) Any new form of professional practice must be based on the principles set out in this Code.

*The Hague, July 1955.*

# The Geometrical Origins of Certain Curves in Pottery and Architecture

By R. F. Orfeur, B.Sc.Eng.(Lond.) [A]

*Editor's Note.*—This article introduces a piece of research upon which the author has been engaged at intervals as opportunity offered during the last thirty years. While still an architectural student he was led to suspect that the profiles of many fine Greek vases were not drawn freehand, as has been commonly accepted by architects and archaeologists, but were in fact geometrical curves of a sort which since the time of the Greeks has received little attention. He believes also that these curves were employed in architecture, and that knowledge of them came from Egypt, where they were in use as far back as 3000 B.C.

To test the validity of his thesis he has measured accurately the profiles of a number of exhibits in the British Museum, and also in the Ashmolean and Fitzwilliam Museums, and working backwards as it were, he has shown that these profiles can be derived from the interpenetrations of cylinders or of cylinders and cones, but in this article he confines himself to interpenetration of cylinders only. If his thesis proves to be correct—and he concedes that confirmation must be a gradual process gathering weight by the accumulation of evidence in its favour—it will be a major contribution to our knowledge and appreciation of classical art. Involving as it does the different subjects of geometry, architecture and archaeology, this particular field of study has been neglected, but we think the R.I.B.A. JOURNAL is a suitable vehicle for its publication.

In 1924 I wrote a thesis entitled 'On Curves in Pottery and Architecture' which had the good fortune to win the Architectural Association Essay Prize in that year.<sup>1</sup> It was concerned mainly with the Greek and Egyptian periods and it set out to show that the profiles of Greek and Egyptian vases are in fact geometrical curves of a special sort and not freehand curves as was then, and is still, generally supposed; furthermore, it claimed that certain Greek and Egyptian architectural mouldings for which geometrical constructions had been previously suggested by Pennethorne and others, and accepted in a tentative way, could be shown to have the same origins as the geometrical curves postulated above for Greek and Egyptian vases.

Briefly the idea was this: that the vase profiles were obtained by orthogonal projection from the intersection of certain curved geometrical surfaces, the most commonly occurring examples being the

interpenetrations of two cylinders at right angles to each other. Such interpenetrations are best illustrated by drawings and some typical examples are given drawn in plan and elevation. In all cases the axis of the smaller cylinder is vertical and that of the larger is horizontal, and the elevations are obtained by orthogonal projections on to a vertical plane which is parallel to the horizontal cylinder.

Fig. 1A shows an intersection where the axes of the cylinders are in the same vertical plane: in this instance the intersections appear in elevation as the two branches of a rectangular hyperbola. In Fig. 1B the diameter of the vertical cylinder is less than half that of the horizontal cylinder and cuts it eccentrically. Here the intersection is again in two parts, each part appearing in elevation as an oval symmetrically situated above and below the axis of the horizontal cylinder. Fig. 1C is very similar to Fig. 1B except that the vertical cylinder is relatively larger and less eccentric and in elevation the two intersections give rise to what, for obvious reasons, I call *re-entrant ovals*. Fig. 1D is a limiting case where the cylinders cut eccentrically and on one side touch each other tangentially at a point. This produces in intersection a figure of eight curve called by the Greeks a "hippopede" because it resembled the track of horses exercising in a riding school. Fig. 1E shows what happens when the axis of the vertical cylinder is tangential to the surface of the horizontal one. The intersection takes on the nature of a groove and I have called the curve when projected into elevation a *scarab* because it resembles the sacred scarabeus beetle of the Egyptians (cf. scarab seals).

So far all these examples have been restricted to cylinders of circular cross-section—right circular cylinders to give them their correct name. But clearly we have here a way of drawing curves which need not be confined exclusively to two circular cylinders. It is a short step to try what happens when the vertical cylinder cuts a horizontal cylinder whose cross-section is other than circular. Figs. 1F, 1G and 1H are examples of such intersections, the horizontal cylinders being respectively of elliptic, hyperbolic and parabolic cross-section. The resulting elevations are ovals in each case and Fig. 1J is an additional example of type 1H showing a re-entrant parabolic oval as it may be called.

The foregoing examples are sufficient to explain the sort of curves I have had in mind as the prototypes of Greek and Egyptian vases. But before proceeding further it may well be asked what caused me to entertain this notion of intersecting surfaces in the first place. The answer is

that it was largely by accident. I had become acutely aware of the force of gravity as an overriding factor in the shaping of form and came to regard all natural bodies, organic and inorganic, as being visibly influenced by it: that is to say, they were either gravitationally streamlined already or were in the process of becoming so. Evidence of such streamlining is most readily seen in plant forms, which show a marked tendency to circularity in plan; a characteristic which is conspicuously absent in elevation. Plants divided by any vertical plane through their axis show the one half approximately the mirror image of the other; but divided by a horizontal plane such symmetry is not to be found—top is always different from bottom. To picture the matter more clearly I posed to myself the following problem. Given a circle in plan—how will it be influenced by gravitation when turned into vertical plane? I answered this question in the following way: Let the circle be inscribed in a grid of say 64 squares. When turned into vertical plane half the grid lines are vertical and half horizontal. Let the horizontal lines be displaced so that the intercepts on the vertical lines represent a constant acceleration downwards—the distances through which a body moves in equal and successive intervals of time when falling from rest under gravity (Fig. 2). Now suppose the circle in elevation to be attached to the displaced horizontals. The circle has now become an oval; a diagram of what I chose to regard as a streamlined circle. (This operation is not of course to be taken seriously as an exercise in structural mechanics: my only concern here is to record what I actually did, which was to draw a particular kind of oval in a particular kind of way.) This oval bore such a striking resemblance to the profiles of many fine Greek vases that it led me to speculate whether a Greek vase, geometrical in plan by reason of its being shaped on a potter's wheel, might not also be geometrical in elevation.

At this stage two distinct lines of inquiry opened before me, the one involving problems of form in structural mechanics the mathematical complications of which frankly appalled me, and the other raising issues of an archaeological character which appeared rather less intimidating. And so, much as I longed to be 'modern', I reluctantly resigned myself to the lesser task of investigating the profiles of Greek vases.

First inquiries were not encouraging: it was most improbable that the Greeks would have drawn ovals by the method I had used. Authorities on Greek mathematics made it clear that the Greeks knew nothing of gravitational force: nor was

<sup>1</sup> Published in the following issues of the ARCHITECTURAL ASSOCIATION JOURNAL—November 1924, January 1925, February 1925. It may be of interest to record that the adjudicator for the Essay Prize in 1924 was C. F. A. Voysey. It says much for his magnanimity that he should have awarded the prize for an essay so much at variance with his most cherished ideals.



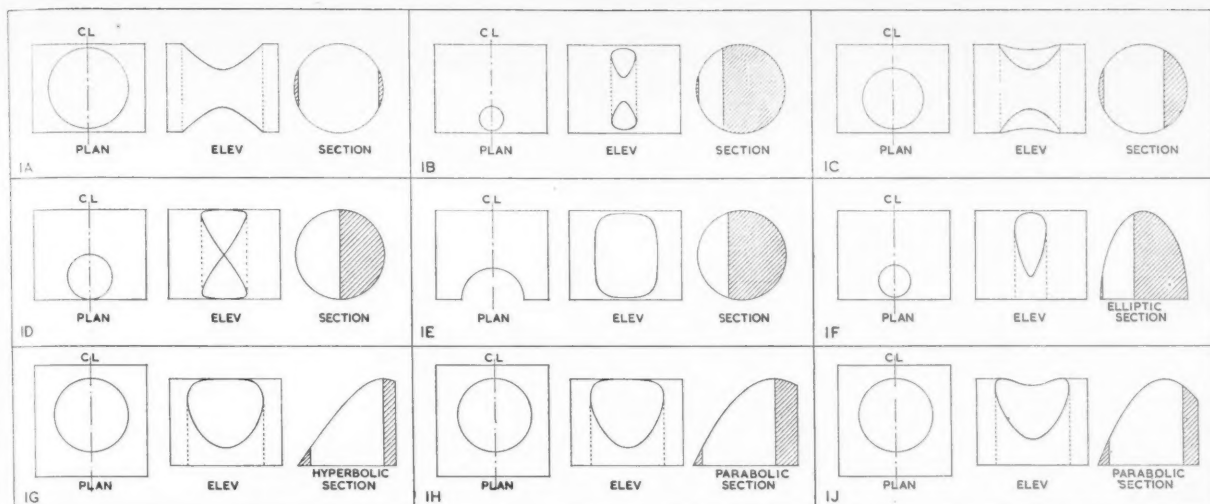


Fig. 1. Interpenetrations of cylinders

there any evidence of their use of distorted frameworks of square lines (such as Albrecht Dürer and his contemporaries used in their comparative studies of human proportions).<sup>1</sup> The whole method had therefore to be discarded. However, I noted that the diagonal AC in Fig. 2 became a parabola A'C' in the parabolically distorted framework, and eventually it dawned on me that if a vertical right circular cylinder be made to interpenetrate a horizontal cylinder of parabolic section A'C' as in Fig. 2, then the elevation of its intersection parallel to the horizontal cylinder results in an oval curve identically the same as that obtained by the methods of co-ordinate geometry. Here another difficulty arose: for the conic sections were not discovered as such until about 360 B.C., up to two centuries after the best Greek vases were made. This difficulty is not really a valid one as will be shown later; but I accepted it as such at the time and thus was forced back to the interpenetrations of two right circular cylinders, examples of which are shown in Figs. 1A to 1E, and against which there could be no such objection.

Having thus formulated a method by which the profiles of Greek vases could be drawn, the obvious thing to do was to test by analysis of actual examples whether their profiles could be shown to consist of curves conforming to this method. The best measured drawings available were those of Jay Hambidge in his book *Dynamic Symmetry and the Greek Vase* and of L. D. Caskey in *Geometry of Greek Vases*. These books contained line drawings of from one-sixth to one-quarter full size, and in due course a number of vases whose shape rendered them suitable for analysis were examined and it was found that the profiles were consistent with their having been obtained from the interpenetration of a vertical circular cylinder and a horizontal cylinder of the following sections: (a) cir-

cular, (b) hyperbolic and (c) parabolic. These results were satisfactory as far as they went, but they fell far short of what was necessary to win acceptance for a thesis which I soon found was quite contrary to established expert opinion. Not only was the freehand design of Greek vase profiles a matter considered to be beyond dispute, these profiles were admired as the very perfection of the freehand artist's art. I cannot illustrate this better than by an extract from a letter I received from Professor Lethaby on this subject. I had sent him a copy of my essay 'On Curves in Architecture and Pottery' hoping to enlist his interest and support. His reply to a student quite unknown to him was indeed courteous and kindly, but alas it left me in no doubt that my ideas were anathema to him, as no doubt I ought to have foreseen, seeing what a leading protagonist he was of the Arts and Crafts movement.

'I shall not object to the forms of Greek Vases', he wrote, 'until it has been proved that they were tortured into shape by the application of some geometrical nostrum by micrometer measurements—but that proof would then make them ugly to me—for that is not how I think beauty arises.'

Others, who knew me well, and whose opinions I was wont to trust and respect, were equally discouraging: I was wasting my time on a subject outside the range of architectural studies, I was ruining whatever chances I might have of success in an architectural career.

For a long time I could make no further progress. But in recent years I have at last been able to resume the investigation on a much more scientific basis. Before proceeding to analysis it was necessary to have measured profiles of an accuracy—if not of micrometer measurements—at least conforming to reasonably small and stated tolerances. There were difficulties to overcome in achieving this. It was desirable that the profiles should be full size; also some of the vases I should most like to measure

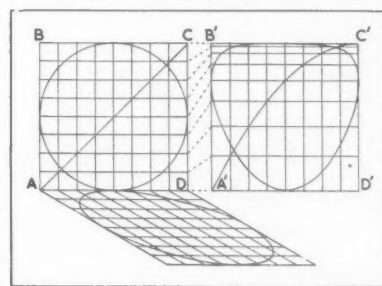


Fig. 2. Gravitationally streamlined circle

were priceless and extremely fragile. Hence it would be necessary to measure such objects without touching them. Then again the British Museum authorities informed me that it had been established that Greek vases were not exactly solids of revolution—that is, they were not exactly circular on plan and the profiles varied slightly according to the selected plane of the profile. Hence it was necessary to obtain at least two, and in special cases four evenly spaced profiles, and to obtain from these an average profile before proceeding to analysis. In order to achieve all this, special apparatus had to be devised, a full description of which is given in an appendix to this article, together with the routine procedure followed in preparing the 'Average Profile'. This Average Profile is taken to be the nearest one can hope to get to the shape of the vase intended by the designer. Unlike the actual profiles obtained from the vase itself, it is truly symmetrical about its vertical axis and the vase form produced from it is a true solid of revolution.

At this stage something must be said as to the suitability for analysis of a given profile. Suitability is made up of several considerations. The vase chosen should be one of a well-recognised type and one for which the typical profile can be matched by geometrical construction: it should be as free as possible from obvious defects of workmanship; and as much as possible

<sup>1</sup> See refs. to Dürer in *Growth and Form* by D'Arcy Wentworth Thompson.

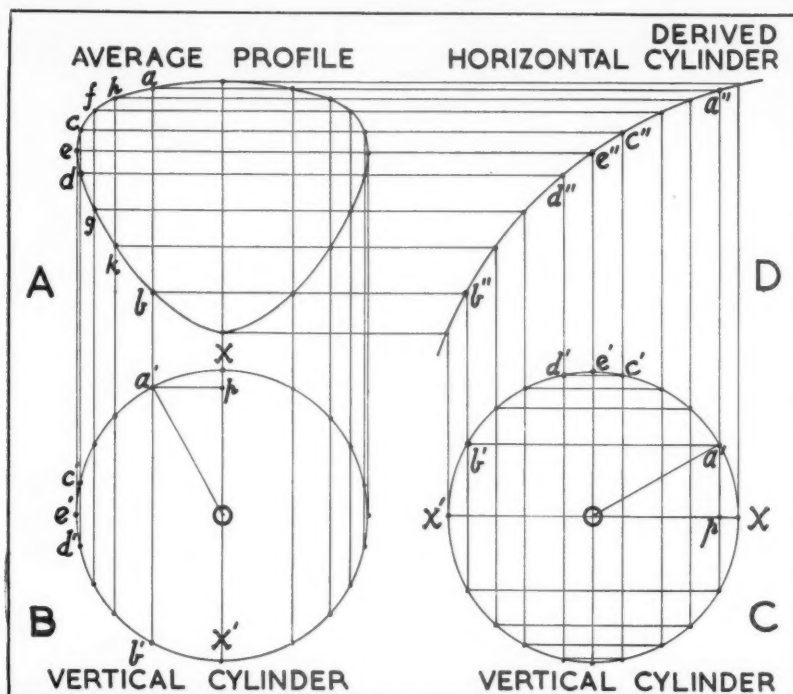


Fig. 3. Construction of Derived Cylinder

of the complete curve should be visible in the vase form itself. Thus suitable vases include those of ovoid shape with simple handles and small bases and necks. Especially suitable are ovoid forms with no handles and no bases. Among such are the Greek *dinos* and *lebes* vessels, and a number of Egyptian stone vessels. These vases and vessels are of interest because they make it clear that the profiles were thought of as a whole on account of the continuity of the curve which is revealed when no base is provided. But apart from vases and vessels there is another kind of ovoid object which particularly lends itself to analysis and may even be said to invite it. This is the macehead of ovoid shape. These maceheads dating from 3,000 B.C. have been found in Egypt and Sumeria. As a rule they are only about 3 in. high, they are made of stone, and the ovoid form is complete except for the cylindrical hole which received the wooden staff or handle on which it was mounted.

Given then a suitable Average Profile, the analytical procedure is as follows:

A circular cylinder with vertical axis, hereafter called the Vertical Cylinder, is assumed whose diameter is equal to that of the Average Profile at its widest. The question is then asked: With what horizontal cylinder having a continuous surface must the Vertical Cylinder interpenetrate in order that the line of intersection when projected into elevation shall be identical with the Average Profile? By 'projected into elevation' is meant the orthogonal projection of the intersection on to a vertical plane which is parallel to the horizontal cylinder. There is only one

horizontal cylinder which can satisfy this requirement and from now on it will be referred to as the Derived Cylinder. Fig. 3 explains the method of constructing it. A is the Average Profile set out in relation to its axis of symmetry. B is the plan of the Vertical Cylinder, with diameter and axis the same as that of the Average Profile. Points a and b on the profile are carried down to their respective position a' and b' in the plan of the Vertical Cylinder. In C the Vertical Cylinder has been rotated through 90° ready for setting up the section of the Derived Cylinder the plane of which is perpendicular to the Average Profile. In D a' and b' have been projected from a' and b' in C to meet the horizontal projections of a and b and these points a'' and b'' are then established as two points on the cross-section of the Derived Cylinder. The process is repeated for a succession of points on the Average Profile such as c and d, e, f and g, h and k, etc. These constitute points on the Derived Cylinder and determine its outline. It is to be noted in the case of points c' and d' and also c'' and d'' are liable to inaccuracies of drawing, and in practice it is better to calculate all the points on the Derived Cylinder. Thus  $OP = \sqrt{Oa'^2 - a'p^2}$  and so on.

The required Derived Cylinder has now been established and the next step is to identify its section, if possible to do so, as a recognisable curve. Here my routine practice has been to ask in turn the following questions. Is the curve a circle?

If not, is it an hyperbola? If not, is it a parabola? If not, an ellipse? If not, is it an oval which is itself derived from two interpenetrating cylinders? If the answer to all these questions is a negative one, this particular method of analysis is abandoned.

Is the curve an arc of a circle? This is easily ascertained with a pair of compasses. If it is—and so far it has proved invariably so in the case of maceheads, and very often so in the case of Egyptian vases—then it is concluded that the macehead or vase profile is derived from two interpenetrating circular cylinders.

If the curve is not the arc of a circle then we must pass to the next question. Is the curve an arc of an hyperbola? The test for an hyperbola is not quite so simple. It is assumed that if the curve is hyperbolic it has a vertical axis. A point C is marked at the lower end of curve. Another point A is marked at the top of curve or as a continuation of the curve, where it is thought the apex of the curve may lie. The rectangle ABCD is completed. A point E is chosen at random on DA produced. One of the standard ways of constructing an hyperbola can now be applied (see Fig. 4). BC and CD are divided into any number of equal parts. The division points of BC are joined to A. The division points of CD are joined to E. Where each pair of lines cross is a point on an hyperbola passing through C with its apex at A. If this curve does not coincide with the curve of the Derived Cylinder—and it is most improbable that it will—then the point E is raised or lowered as may appear desirable and a fresh hyperbola is drawn. If no point E on DA produced can be chosen so that an hyperbola can be drawn to coincide with the derived section, then a fresh position of point A must be chosen and the whole process as described above must be repeated for A in its new position. If after repeated trial and error two points A and E can be found so that an hyperbola through C and A approximates very closely to the section of the derived cylinder, it is concluded that the Average Profile of the vase results from the interpenetration of a vertical circular cylinder with a horizontal cylinder of hyperbolic cross-section. A number of solutions of this kind have been found in both Egyptian and Greek vases.

If however no points A and E can be found so that an hyperbola can be drawn to coincide with the section of the Derived Cylinder, then the question 'Is the curve an arc of a parabola?' is next in order.

The test for a parabola is similar to that for an hyperbola and rather more simple (see Fig. 4). A point A is chosen as an assumed apex. The rectangle ABCD is completed and BC and CD are subdivided as before. The divisions of BC are joined to A and lines are drawn through the divisions of CD parallel to BC. The intersection of the lines drawn to A with the corresponding lines parallel to BC gives a series of points on the parabola drawn through C to an apex at A. Only one such can be drawn through C to A. If it does not coincide with the section of the Derived

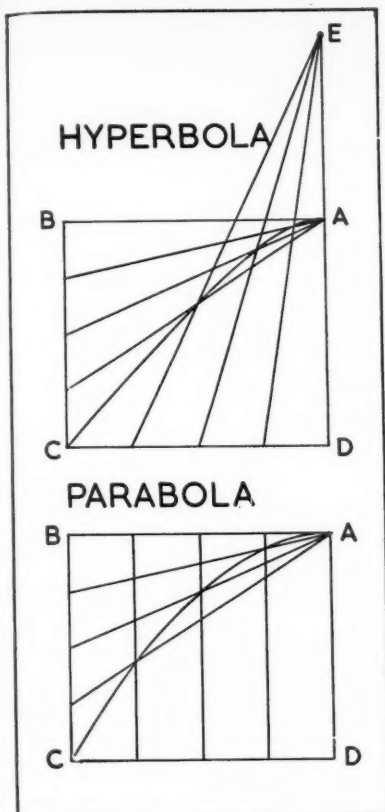


Fig. 4

Cylinder then a fresh point A is selected and the operation repeated. If after repeated trial and error a point A is found so that the parabola drawn from C to A coincides very closely with the section of the Derived Cylinder, then it is concluded that the Average Profile of the vase results from the interpenetration of a vertical circular cylinder with a horizontal cylinder of parabolic section. So far a solution of this kind is confined to Greek vases only.

If, however, after repeated trials no point A can be found so that a parabola can be drawn to coincide with the section of the Derived Cylinder, then the next question to be asked will be 'Is the curve an arc of an ellipse?' The test for an ellipse is conveniently made in a different way from that used for hyperbola and parabola and may be best explained by reference to Fig. 5. A cylinder marked A of elliptical section (a cylindroid) is shown, its major axis being assumed vertical and its minor horizontal. Suppose the section to be proportionally compressed along the axis YY so that it passes through the stages B and C until stage D is reached, when the YY axis of the elliptical section has become the minor axis and that on XX the major one. But at some stage of compression, as at Stage C, the major and minor axes will have become equal and hence the section will have become circular, which is easy to test for.

Now what is true for the elliptical section taken as a whole is equally true for any part of it. Thus if a vertical cylinder as shown intersects the elliptical cylinder A it will do so over the range of the arc  $aa'$  of its section, and if the elliptical cylinder is compressed the arc  $aa'$  will likewise be compressed and pass through the stages  $bb'$ ,  $cc'$ ,  $dd'$ . And when at some stage C the elliptical cylinder becomes circular it follows that  $cc'$  will be an arc of a circle. Hence if when the arc  $aa'$  is proportionally compressed it becomes at some stage  $cc'$  an arc of a circle, it follows that the original  $aa'$  must be an arc of ellipse. It is then concluded that the Average Profile of the vase under examination results from the interpenetration of a vertical circular cylinder with a horizontal cylinder of elliptical cross section. If, however, compression of the curve at no stage reduces it to a circular arc, then it shows that it cannot have been elliptic to begin with and the remaining question to ask in this scheme of analysis is this; 'Can the Derived Cylinder itself be an oval obtained by the intersection of two cylinders? This test for reasons of space is not described and so far only one solution of this kind has been found—in the case of a beautiful Greek cup.

The manner in which an Average Profile is subjected to analysis having been outlined, the way is now clear to see how far it works in actual practice. It should be pointed out, however, that this analysis is applied solely to the body of a vase. No account is taken of handles, neck or base, although these features may be quite prominent, as in the case of Greek amphorae. The four examples chosen for illustration are two of them Egyptian and two from the Greek period, and each of them has points of special interest.

The original drawings on which analysis is based are drawn on Ethulon plastic film. Lines are scratched with a needle point stylus and measurements pricked off with the needle. With the aid of a watchmaker's glass and a steel scale subdivided into 0.1 in. intervals, it is found possible to plot measurements to the nearest 0.005 in. The horizontal Derived Cylinder is calculated from the Average Profile, which itself is calculated from two or four separate profiles. Thus errors of drafting are reduced to a minimum. The Derived Cylinder is represented on the drawings by a succession of points on the curve, and these points constitute the actual record on which the work of analysis is concentrated. When a close fit to these points has been found, be it circle, hyperbola, or whatever it may happen to be, a smooth geometrical curve is drawn through, or adjoining, the points of the Derived Cylinder. This is regarded as the ideal Derived Cylinder and the intersection of this curve with the assumed Vertical Cylinder gives the ideal profile of the vase or macehead, which is then superimposed on the Average Profile consisting of plotted points. The closeness of fit which obtains between the ideal geometrical curve and the plotted points is thus a practical measure of the coincidence of fact and theory. The

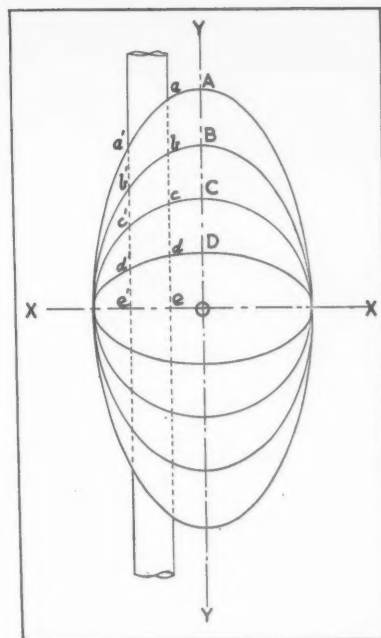


Fig. 5

accompanying examples are founded on these original drawings but have been redrawn full size with heavy lines suitable for a reduced scale of reproduction: at one-quarter full size. Similarly points have been replaced by black dots centred on such points. This has involved some unavoidable inaccuracy and it should therefore be borne in mind that the reproductions given here are illustrations only and cannot really take the place of the original drawings themselves.

**Example I.** See Figs. 6 and 7. Ashmolean Museum. No. E 3631. Ceremonial Macehead of King Narmer. Limestone. Hierakonpolis. 3300–3000 B.C.

This celebrated object known to Egyptologists everywhere has been regarded as a test case. Four separate profiles were measured. These have been superimposed on one another, but since the profiles criss-crossed so much they have been replaced for the sake of clarity by inner and outer envelope lines which serve to indicate the range of errors of execution. The Derived Cylinder DD and ideal geometrical curve GG, which in this case is a circular arc, are shown separately, as are also the Average Profile AA' and the ideal oval superimposed upon it. The diameters of the Vertical Cylinder and the Derived Cylinder GG are in the ratio 1 to 4. This macehead appears unaffected by age or use and is substantially in as perfect condition as it was when it left the hands of the craftsman who made it 5,000 years ago. The low relief carving, as can be seen from the photograph (Fig. 7), has little effect on the profile; it produces a 'pitted' effect on the recorded profiles which has been



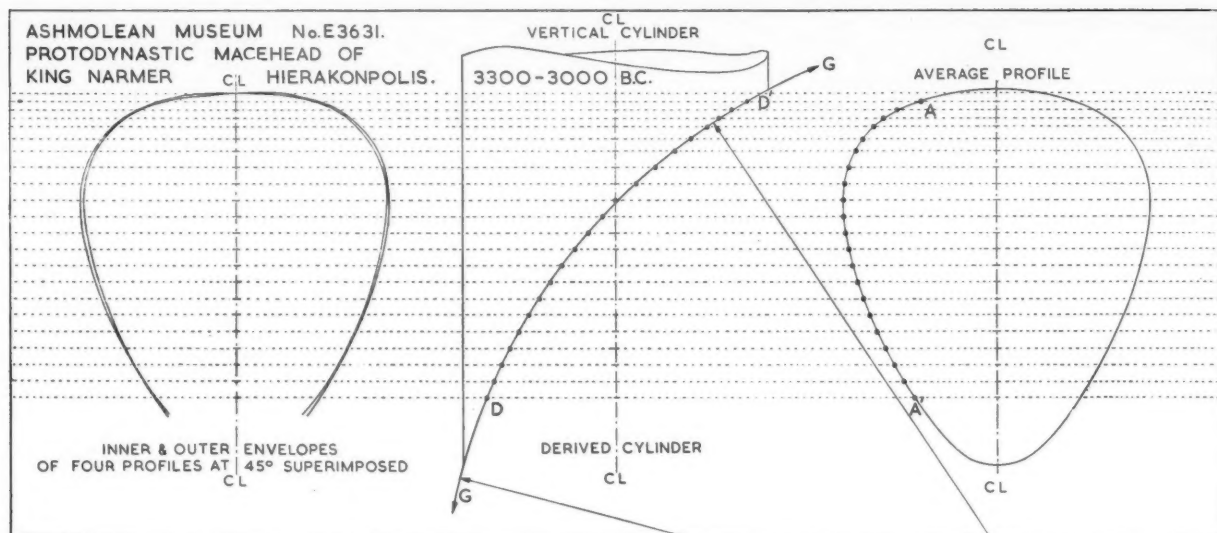


Fig. 6

smoothed over by the use of railway and French curves.

**Example II.** See Figs. 8, 9 and 10. *British Museum, No. 99/7-21/5. Greek Dinos. 'Theseus and Amazons.' Agrigento. 440 B.C.*

This is one of the most treasured examples of Greek pottery in the British Museum. Because of this, and by reason of its Dinos shape which is so suitable for analysis, four separate profiles were made of this vase also. They are superimposed as before and replaced with an inner and outer envelope. The Average Profile and the Derived Cylinder are again shown separately and the latter has superimposed upon it an hyperbola, the construction of which is shown, and as will be seen it forms a very close fit. But the analysis has been carried further. The rectangle ABCD and the point E provide sufficient information to calculate with great exactitude the asymptotes of the hyperbola and these have been plotted. The semi-angle between them is  $36^{\circ} 49'$ . This appears to be at first of no special significance. But let reference be made to Fig. 10. A cone is shown in front and side elevation. In the front elevation vertical planes 1, 2 and 3 cut the cone at right angles to the plane of the paper and another plane similarly cuts the cone on the line of its vertical axis. In the side elevation planes 1, 2 and 3 appear as similar hyperbolas, the only difference between them being that of scale. The plane cutting the cone on its axis appears as two straight lines, FAH and KAC, cutting each other diagonally at the apex of the cone. The semi-angle between them is the semi-apical angle of the cone and these lines are in fact the asymptotes of the hyperbolas 1, 2 and 3, and indeed of all hyperbolas formed by planes parallel to them.

Now it follows from this that in Fig. 8 the hyperbola of the Derived Cylinder can be regarded as a plane section of the cone ROS, POR of semi-apical angle

$\alpha = 36^{\circ} 49'$ . . . Now this angle differs from  $36^{\circ} 52'$  by only  $3'$  or  $\frac{1}{20}$  of a degree. And the co-tangent of  $36^{\circ} 52'$  is precisely  $\frac{4}{3}$ . It is known that it was the Egyptian practice, at least from the time of the pyramid builders, to measure the magnitude of an angle and so to define it exactly by means of its co-tangent. It can therefore be said that not only is the Derived Cylinder an hyperbola, but that it was most probably obtained as the plane section of a cone whose semi-apical angle differs by only  $\frac{1}{20}$  of a degree from the angle whose co-tangent is  $\frac{4}{3}$ .

This can hardly be merely fortuitous. It is paralleled by two other Greek vessels of similar type, one made of bronze and the other of pottery, and I can only infer that Greek potters were heirs to a practice handed down from ancient Egypt.

**Example III.** See Figs. 11 and 12. *British Museum No. 557. Etruscan Amphora. Bronze. Vulci. Early 5th century B.C.*

This handsome bronze amphora must be well known to generations of students of Greek and Etruscan art at the British Museum. Though classed as Etruscan it shows the strong influence of Greek archaic work.

In this case, because it is so large, the Derived Cylinder is superimposed on the average profile. The analysis shows the Derived Cylinder DD' to be an arc of an ellipse, because when compressed proportionally on the arbitrary base line DC, and the compression reached the position DD'', it was found that the points DD'' closely fitted the arc of a circle, as shown. Moreover the set of points DD'' bisect the ordinates on DC drawn from the corresponding set of points on the Derived Cylinder DD'. This shows that not only is the Derived Cylinder an arc of an ellipse, the ellipse is also a special one, with major axis double its horizontal minor. Again, this can scarcely be fortuitous.



Fig. 7. The Macehead of King Narmer (see Fig. 6). Photograph lent by the Ashmolean Museum (No. 3631)

Also I have found four Egyptian vessels, the Derived Cylinders of which are elliptical and wherein the major axis is double the minor in two cases, and the major axis three times the minor in the other two. Nor can it be fortuitous that the arc DD'' is struck from a circle three times the diameter of the Vertical Cylinder.

**Example IV.** See Figs. 13, 14, 15, 16. *Fitzwilliam Museum. E59-1898. El Kab (1116) Slate. 3300-3000 B.C.*

This example of a slate bowl is quite typical of many others about the same age, size and shape, and the analysis is the same as that for Example No. 1—the interpenetration of two circular cylinders—by far the most frequent interpenetration, which accounts for three-fifths of the Egyptian examples so far. It is included because its

BRITISH MUSEUM No.99/7-21/5.  
GREEK DINOS. AGRIGENTO. 440 B.C.

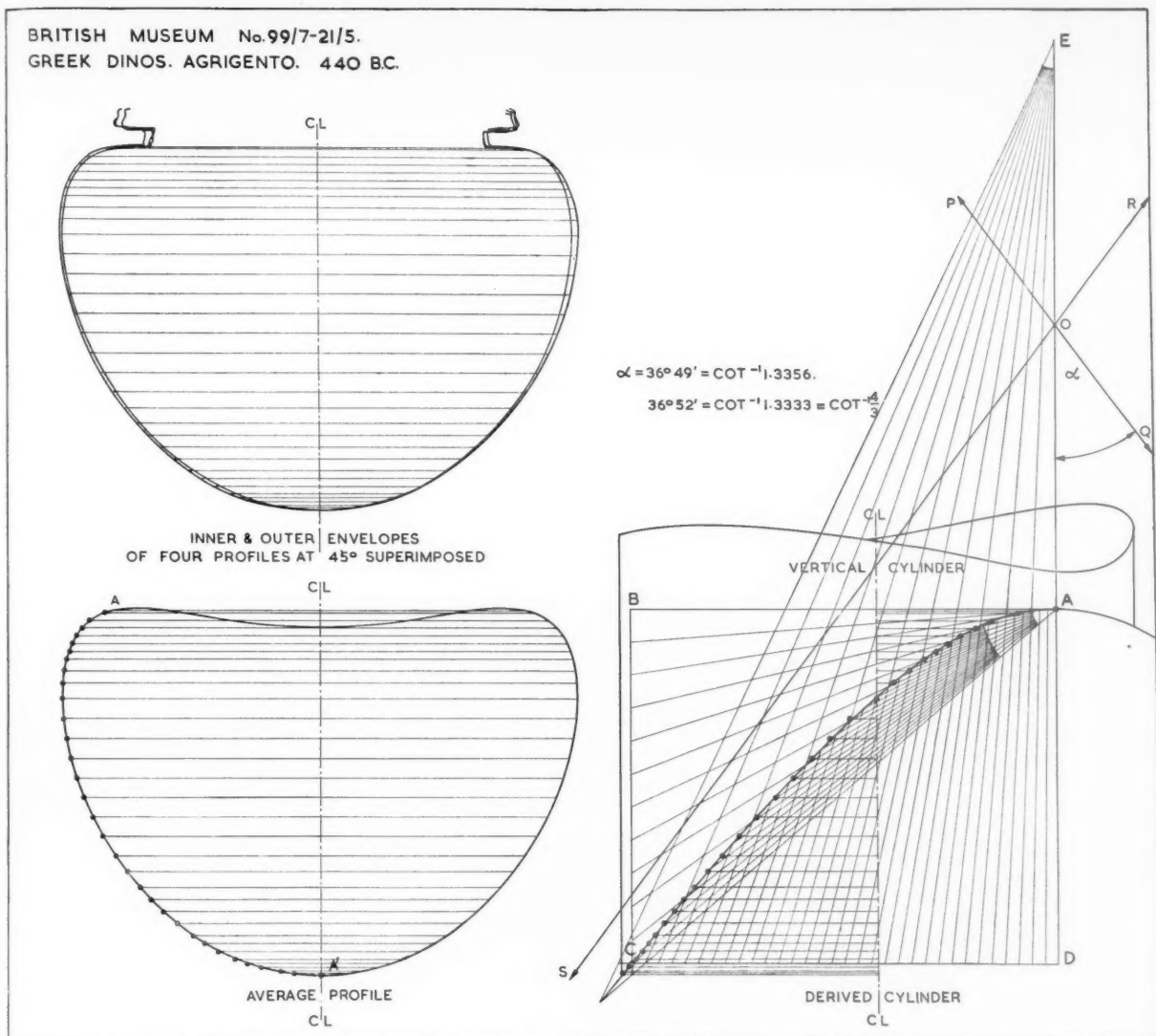


Fig. 8



Fig. 9. The Greek Dinos, 'Theseus and Amazons', Agrigento, 440 B.C. (see Fig. 8). Photograph supplied by the British Museum (No. 99/7-21/5).

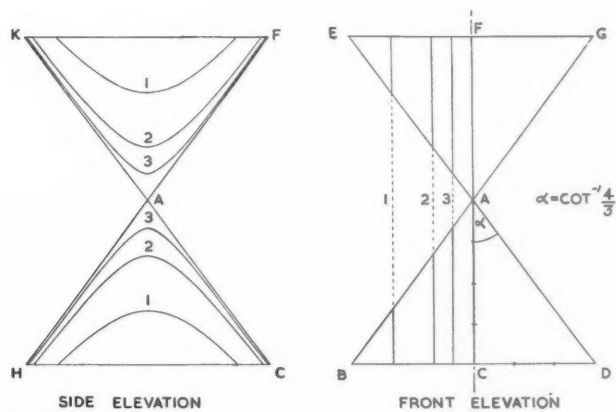


Fig. 10

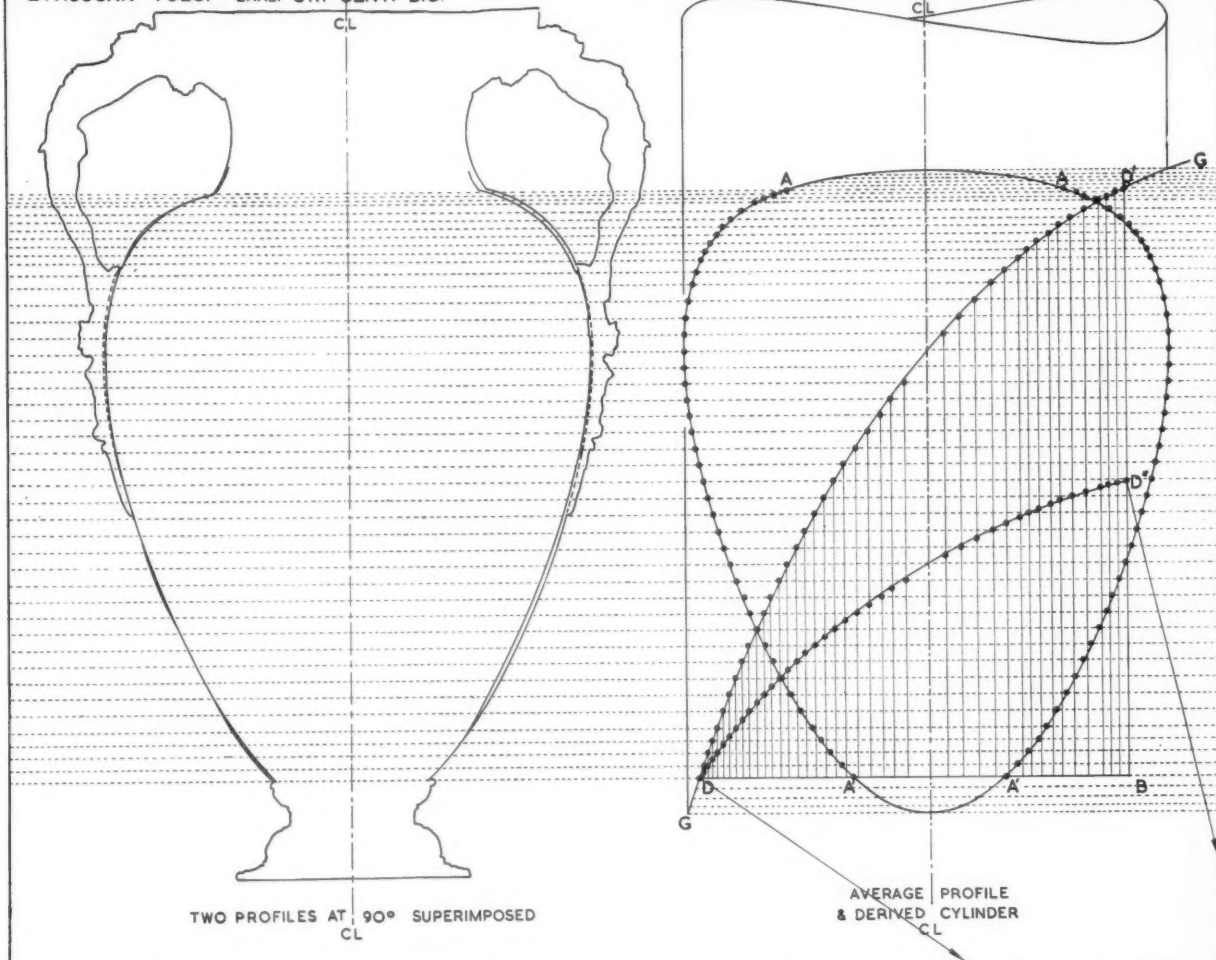


Fig. 11 (above) and Fig. 12 (right). Bronze Etruscan Amphora. Early 5th century B.C. Photograph supplied by the British Museum (No. 557)

shape may well prove to be the source from which the echinus moulding of the Greek Doric Order originated. It is not nearly as well known as it should be that the echinus moulding is so called because of its likeness to the sea-urchin shell. Sea-urchins abound in the Mediterranean, where varieties occur quite 5 in. in diameter and where they are sought after as a highly appreciated kind of sea food.

But they are not only to be found living in the sea now, they are also found fossil in the sedimentary rocks laid down in sea water—hence they are found in chalk and limestone formations. Greece is famous for its limestone quarries, as are many islands in the Aegean Sea, and in Egypt limestone escarpments studded with old quarries line the Nile from Cairo up to some 40 miles above Karnak and Luxor.<sup>1</sup> As a matter of fact I am the fortunate possessor of a fine tertiary echinoid fossil, the presen-

<sup>1</sup> *Ancient Egyptian Masonry*. Clarke Engelbach, p. 12.

tation of which to me was kindly sanctioned by the trustees of the Natural History Museum. It 'belongs to the genus *Heteroclypeus* and is presumably from the Miocene, perhaps of Malta', and it makes a fine model of Doric echinus.

Some years ago I prepared a monograph on the echinus moulding of the Parthenon based on Penrose's measurements in which I was able to obtain a closer fit to the actual moulding with interpenetrating cylinders than Penrose could do by putting circular and hyperbolic arcs together in a quite arbitrary way.

It may seem to many that it is a far cry to go back some 2,500 years previous to the Greek Doric to find the origin of the echinus moulding, but it is as well to remember that fluted columns closely resembling Greek Doric have been found at Saqqara dating from the Third Egyptian Dynasty c. 3000 B.C.

Fig. 14 is a full size model of the two





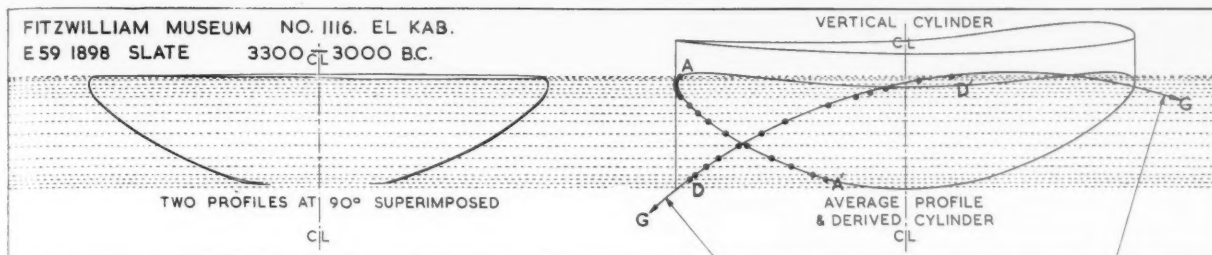


Fig. 13. Egyptian slate bowl, circa 3000 B.C.

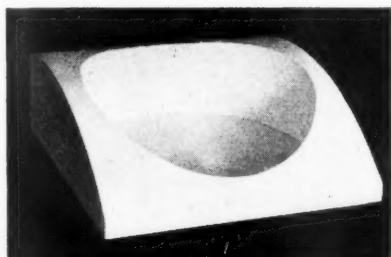


Fig. 14. Model of two interpenetrating cylinders



Fig. 15. Solid of revolution formed from two interpenetrating cylinders.

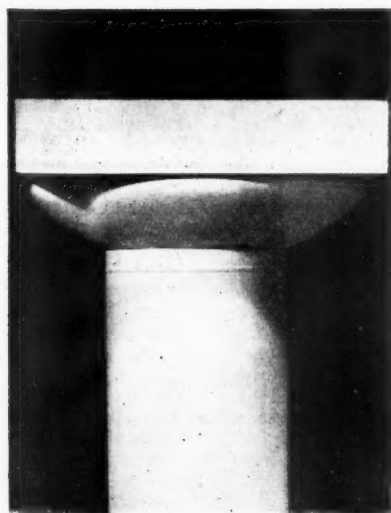


Fig. 16. Model of Doric order using the solid of revolution in Fig. 15

interpenetrating cylinders relating to this particular example. Fig. 15 is the solid of revolution formed from their interpenetration, and Fig. 16 is a passable imitation

of a capital of the Doric Order in which this echinoid solid of revolution is seated on a large tin and surmounted by a flat box.

In the earlier part of this article attention has been directed to Greek rather than Egyptian vases. There are two reasons for this: first in 1923 a sufficient number of Greek vases, drawn to scale, were then available, whereas with Egyptian vases this was not so; and secondly, expert opinion was at that time sufficiently unwilling to credit Greek potters with knowing enough geometry to make my theory credible that there was little incentive to apply it to a period 2000 and more years earlier, which was perhaps the best period of Egyptian design and the one which interested me most. But with growing confidence and the opportunity to make full-size profiles with my own apparatus I began to measure more and more Egyptian stone vases and maceheads. They were not only 'suitable' for analysis in the sense already referred to, they had that precise, just-so look which is so characteristic of geometrical curves. I therefore came to regard the earlier Egyptian dynasties as a period of prime importance in establishing the theory. This accounts for my having now analysed many more Egyptian objects than Greek.

The subjoined table is a record of the analyses obtained so far involving the interpenetration of two cylinders; and since a vertical circular cylinder is assumed in every case, it is sufficient merely to classify the various sections obtained for the horizontal Derived Cylinders only.

Additional to those listed in the table are four Egyptian examples with a quite different kind of analysis—a vertical cone interpenetrating a horizontal circular cylinder—but an account of this type is not included here.

Reviewing these results, it will be noted that three-quarters of the Egyptian objects

yield the simplest and most obvious solution, the interpenetration of two circular cylinders. It seems to me that a result of this kind rules out the possibility of chance and points to the acceptance of a recognised technique of design.

With regard to errors of workmanship, it is probable that while small errors will always occur in the setting out of a design, the choice of material chosen for its execution must always be the dominating factor. Thus maceheads and vessels of stone may come down to us as they were when first manufactured, intact and unaffected by age or use. With Greek vessels of fired clay the position is not so simple. After drying to a leather-hard state they were turned on the wheel to their finished profile, before they were burnt. During firing, shrinkage would occur, and possibly distortion; but given even firing temperatures all round, the shrinkage may be considered as proportional. In some cases there would be a tendency also for the axis to tilt slightly from the vertical, but the effect of this can be largely eliminated in the average profile; and a still further possibility would be the slumping of a vase under its own weight. Once fired, however, no further distortion from age or use need be expected. In the case of bronze vessels, while it is possible that they had a well-nigh perfect profile when finished, they were always liable to denting and tilting and progressive slumping with age. Experience so far leads to the conclusion that stone vessels as a rule tend to smaller errors of profile than those of fired clay and bronze. Nevertheless the finest products of clay and bronze exhibit a quite remarkable regularity of form. In general, examples of about 12 in. diameter show a deviation of profile not exceeding  $\pm 0.12$  in. relative to the average profile at its widest diameter. Compared with this, errors of measurement may well be  $\pm 0.01$  in., but I am content to claim that such errors do

Table of Sections of Derived Cylinders

		Circular	Hyperbolic	Parabolic	Elliptic	Oval	Total
Egyptian vases	.. ..	18	6	—	5	—	29
Greek vases	.. ..	—	4	1	1*	1	7
Maceheads	.. ..	17	(3 Mesopotamian, the rest Egyptian)				17
TOTAL	.. ..	35	10	1	6	1	53

\* Etruscan evincing strong Greek influence.

not exceed  $\pm 0.02$  in., i.e. about  $\frac{1}{50}$  the errors of profile. Errors of measurement therefore seem sufficiently small and little would be gained by achieving an accuracy within finer limits.

Reverting to the discovery of the conic sections in 360 B.C., how can this be reconciled with, for example, the ten Greek and Egyptian profiles which have been analysed, all of them resulting in Derived Cylinders of hyperbolic section and all of which are of earlier date than 360 B.C.? The explanation of this anachronism appears to be that Menæchmus was the first to isolate these curves as the only possible ones produced by any plane section of any right circular cone. But this is not to imply that no one had ever previously drawn a plane section of a cone; nor that these curves could not have been drawn by some other means, for it is quite easy to do so in a way not involving plane sections at all.

But quite apart from the conic sections there are two other conceptions which have been silently taken for granted until now. First, it has been assumed that Egyptian as well as Greek craftsmen made use of orthogonal projection, that is, they were quite able to make drawings in plan, elevation and section; and secondly, that they were quite familiar with the plotting of curves by means of co-ordinates. No evidence has been adduced in support of these assumptions and the only justification for them has been the fact that consistent and reasonable results flow from their use. Hitherto the only authentic plan of ancient date known to me has been the one associated with Statue B of Gudea of Lagash, now in the Louvre. The Sumerian ruler is represented in his capacity as architect: on his lap is a tablet with the plan of a temple engraved on it, at one side is a stylus and beneath the plan is his architect's rule, evidently a scale. The scale is divided into units and the units are subdivided into 2, 3, 4, 5 and 6 parts. Though not from Egypt, this plan is clear evidence that plans were in use as early as 2350 B.C. The subdivisions of  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ , etc., of a unit constitute a series in harmonic progression, and are paralleled by measuring rods of later date in Egypt.

Quite recently, however, I have found valuable evidence in the work already cited, *Ancient Egyptian Masonry* by Clarke and Engelbach, 1930. Herein will be found plans dating from 2000 B.C., including a large scale detail drawing in front and side elevation of a portable shrine believed to date from c. 1580-1350 B.C.; also a reference to inscriptions at Dendera which record the existence of plans dating as far back as 2900 B.C. Even more remarkable an illustration is given showing an architect's diagram of c. 2900 B.C. recording the setting out of a curve by offsets or co-ordinates from a base line.

Thus it will be seen that drawing in plan and elevation, and the plotting of curves by co-ordinates, both of them indispensable operations, no longer rest on internal evidence from objects subjected to analysis, but now find confirmation in

authentic textual and diagrammatic records.

It is satisfactory, of course, to find that particular types of body-profile conform to particular types of geometrical analysis; and astonishing that the earliest examples date back no less than 5000 years ago to 3000 B.C., a length of time as long before the Greeks as we are after them. But it must be admitted there are other types of body, otherwise suitable for analysis, for which I cannot yet find a geometrical interpretation. The Greeks undoubtedly included pottery and architecture as major activities in what they termed the 'mathematical arts', and one can be sure that architects then were not less able to make use of geometrical curves than were master potters. A similar conclusion must apply to ancient Egypt also. If geometrical curves are found in Egyptian stone vessels, they are no less to be expected in Egyptian architecture.

But often an architectural curve is not suitable for analysis because an insufficient arc of the curve is revealed; while in some other cases it may be eminently so in every way—except that it is so large that its measurement is a troublesome and costly task. An instance of the latter kind occurs with the beehive dome of the Treasury of Atreus. Its section appears to be a smooth curve of constantly changing radius; but I have only been able to find in the R.I.B.A. Library drawings of it quite unsuitable for use in analysis. Another instance, this time from Egypt, is in the papyrus capitals of Karnak and Luxor, which are from 15 to 20 ft. in diameter at the top. It is hard to believe they can be other than geometrical, but I cannot find that they have ever been measured with sufficient accuracy to demonstrate that they are so. For these reasons I have been obliged to concentrate on the profiles of vases which are accessible and can be accurately measured without difficulty.

It may be asked how the production of curves by the interpenetration of cylinders first originated. To this question the answer is already waiting in the great prehistoric invention the fire-drill. When later on I found in the *Encyclopaedia of Religion and Ethics* that the *ankh* or *crux ansata*, as the Egyptian 'key of life' sign is variously called, has by some authorities been thought to be a fire-drill, it did not come as a surprise.

In conclusion I acknowledge my indebtedness to the museums where I have measured many objects, including a few of their most prized possessions, and express my thanks to those officials who have given me specialist information, and forewarned me of pitfalls ahead. I also owe my grateful thanks to Professor W. Norman Thomas, C.B.E., M.Sc., M.I.C.E. [F], who has given me much encouragement and useful advice.

## Appendix

**Description of the Measuring Apparatus.** The apparatus consists of a rectangular

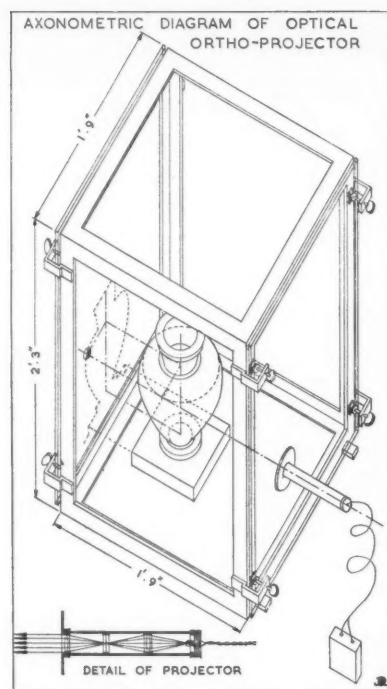


Fig. 17

framework of 2 in.  $\times$  2 in. steel angles 1 ft. 9 in. square on plan and 2 ft. 3 in. high overall. On the outer face of one vertical side four brass studs are fixed, one in each corner, the faces of the studs being aligned with an engineer's levelling plate so as to be coplanar. A sheet of special plate glass is held against the four studs with the aid of two supporting lugs and four thumb screws. This sheet of plate glass is not what is known as 'optically flat' because such extreme accuracy is not required, and the cost would have been prohibitive. The firm who supplied it however are well known manufacturers of optical instruments and I was assured that it was flatter than an engineer's levelling plate. On the opposite side of the framework is a similar arrangement of studs and thumb-screws to receive a  $\frac{1}{4}$  in. sheet of best quality commercial plate glass. The vase or other object of which the profile is required is placed inside the framework. A small optical projector is used to produce a cylindrical beam of light. This consists of a metal tube of  $\frac{1}{2}$  in. diameter. At one end of it the rays from a small electric bulb are collected by a condenser and focused on to a pinhole which is itself placed at the focus of an objective lens at the other end of the tube, from which issues a cylindrical shaft of light. The bulb is lit from an ordinary dry battery connected to it by a flexible wiring. Lastly, the objective is surrounded by a flat disc 2 in. in diameter fixed at the end of the projector tube.

In use the projector is held by hand and the flat disc is pressed against the sheet of special glass, which ensures that the cylindrical beam of light is perpendicular

to the plane of the glass. The projector can be moved to any position on the glass and thus the beam of light can be moved parallel to itself without difficulty. This sheet of special plate glass, which approximates very closely to an optical flat, is  $\frac{1}{2}$  in. thick. This extra thickness is required to ensure that there shall be no appreciable deflection when the projector is pressed against the glass. The plate glass on the opposite side is covered on the outside with a sheet of 'astrofoil' plastic film 0.01 in. thick. This sheet is rubbed flat on to the glass and adheres to it by static charges of electricity but is also held on by clips all round. It is a transparent material which can be manufactured with a frosted finish one side and thus acts as a focusing screen. Furthermore it has the great merit of being unaffected by moisture changes in the atmosphere and also it has a lower coefficient of expansion than glass at atmospheric temperatures. It is thus a material well suited to be a stable recording surface which can easily be stored and made available for future reference.

The apparatus is set up at table height. The vase to be measured is placed inside the framework, suitably supported on hollow boxes and arranged as close as possible to the recording plane. This in the case of very fragile and valuable objects is done by a museum official. Two operators are required, one to manipulate the projector as already described. He holds the projector so that the beam of light picks up the edge of the vase and throws a shadow of it on to the opposite recording screen. The second operator is provided with a suitable prick which is used to prick the astrofoil with a succession of points on the shadow profile of the vase. The projector is then moved in successive stages round the profile of the vase and the whole profile is thus recorded by a close succession of prick-points on the astrofoil sheet. Of course the operation must be carried out in a darkened room or under a cloth covering the apparatus and the two operators. The vase is now turned through 90° and displaced both vertically and laterally to a slightly different position and then the whole plotting operation is repeated. The profiles of several vases can be recorded in this way on a single sheet of astrofoil. It does not matter if the profiles cross as long as they are distinct. The spacing of the points is at about  $\frac{1}{8}$  in. in the case of a large vase, but where there is a rapid change of curvature or the vase is small, the points are placed much closer together.

#### Errors which may occur in using the apparatus.

1. If the two sheets of plate glass are not exactly parallel. This error is very small and its effect quite negligible.
2. If the projector beam is not exactly perpendicular to the plane of the glass it is pressed against. This error can be appreciable if care is not taken. But if the projector is always held the same way up then the error is so small as to be negligible.

3. Diffraction. Provided the surface of the vase at the plane of projection is not more than 8-9 in. from the recording screen the spread of the shadow is negligible.

4. Errors due to the operators. Errors of the order of 1/100 in. may be due to the operators, but they are confined to single points and are non-cumulative.

A notable feature of this method of recording profiles is that a point once pricked cannot be erased. The whole process of profile recording must be completed before an 'average' profile can be prepared. The record is available for subsequent examination just as it was when made and there is no possibility of altering the profiles to conform to a desired result.

The above description of the method of obtaining the profiles of a vase has described a typical case where two profiles at right angles to each other are recorded for any one vase. But since the vase and large macehead referred to in the article must be regarded as test cases by reason of their specially fine workmanship and the fact that they are objects well known to every well-informed archaeologist the world over; in such cases instead of being content with the two profiles which are normally sufficient I have measured four profiles, spacing the profiles at angles of 45° instead of the usual 90°. Having obtained the vase profiles, whether two or four, the next stage is the laborious one of preparing the 'average' profile on which the work of analysis must be based.

**Preparation of the Average Profile of a Vase.** Given two plotted profiles of a vase, a smooth line is drawn in pencil through the pricked points which form the outline of the profile. A tracing of one profile is made and this is folded so that the two halves of the profile are as nearly as possible coincident, for in no case are they exactly so. This done, the line of the fold is regarded as the 'best' axis and this axis is transferred to the original plotted profile by pricking through to the astrofoil sheet. For this and all subsequent straight lines, a steel straight edge and steel set-squares are used and the line itself is scratched with a needle point. This is much more accurate than drawing with the hardest of lead pencils and is a return to the classic method of drawing with a stylus but using modern materials. The axis of symmetry constitutes the line of reference for recording measurements, and horizontal lines at right angles to the axial line are scratched across it at convenient intervals of from  $\frac{1}{2}$  in. down to  $\frac{1}{16}$  in., according to the curvature of the profile. The second plotted profile is treated in exactly the same way, taking care that the horizontal lines are placed at the same heights above the bottom of the vase as the corresponding lines in the first profile. The horizontals are given distinguishing numbers and for each pair of horizontals the offsets from the axial line to the profile are measured right and left. Thus four offsets are measured at each level: these are tabulated in order and in each the arithmetical mean of the offsets

is worked out, which thus becomes the average offset at that level. The measurements are made with a steel scale divided into 1/100 in. and with the aid of a watchmaker's glass it is quite possible to measure to the nearest 1/200 in.

From the data so obtained the Average Profile is then plotted with reference to its axis of symmetry on a sheet of 'Ethulon' film. This is a material well known in architects' offices and it has the merit of being suitable for both inked and scratched lines; scratched lines are used in the plotting and inked lines are afterwards added where necessary to make the main lines readily visible. Ethulon has a small movement due to atmospheric changes of about 1/100 in. in 12 in., but this is not considered sufficient to affect the analysis.

## Film Notes

*The Film Sub-Committee, in criticising the following films, have reviewed them primarily from the architectural angle; i.e., the assessment has been based on the value which the film is likely to have for an ordinary audience who wish to learn something about architecture, planning or building.*

*The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 mm. and 16 mm.) are given. Sound films are marked 'sd' and silent 'si'. The running time is given in minutes.*

*(F) indicates free distribution.*

*(H) indicates that a hiring fee is payable.*

### Equilibre

French 1952 (H)

**Summary.** History and development of the arch: its antecedents traced in such buildings as the Parthenon: its evolution and principles demonstrated in relation to French cathedrals.

**Appraisal.** A vivid presentation of the theory of arched structures, somewhat spoilt by a tendency to sentimentalise the subject. The photography, however, is good and excellent use is made of models and animated diagrams. In the copy seen, poor reproduction of the French commentary made it difficult to follow.

16 sd. 18 mins. Institut Français du Royaume-Uni, Queensberry Place, Kensington, London, S.W.7. (French commentary.)

### Le Corbusier, Marseilles

Britain 1953 (H). Matthew Nathan

**Summary.** A visual study of the Unité d'Habitation in Marseilles.

**Appraisal.** The film seems chiefly concerned with the Unité d'Habitation as a feature in the landscape and its photographic potentialities are well handled. The film is not a technical study of the building, though it would be of great value seen in conjunction with such a study.

16 colour. 10 mins. Central Film Library, Grosvenor Buildings, Bromyard Avenue, Acton, London, W.3.



# Pulverised Fuel Ash Exhibition at the R.I.B.A.

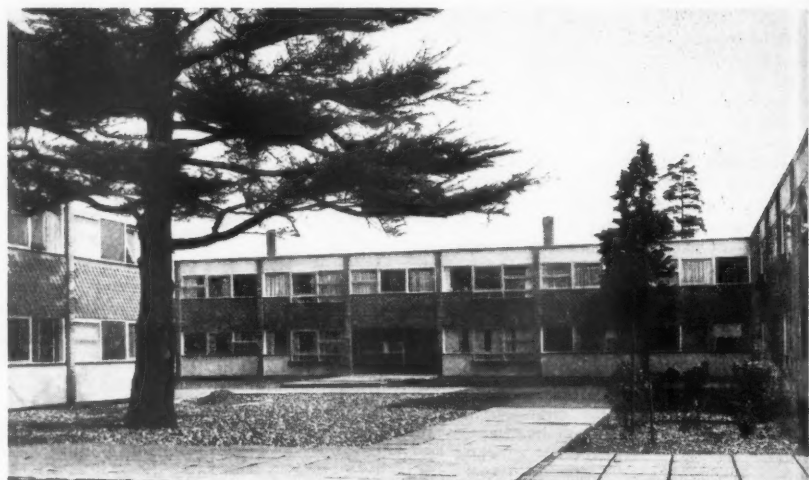
Prepared by the Central Electricity Authority

THE RAPID GROWTH in the burning of pulverised coal in power stations in this country has led to the creation of large quantities of pulverised fuel ash—sometimes called fly-ash; indeed the output has risen from about 750,000 tons in 1947 to over 2,000,000 tons a year today and is expected to be some 4,000,000 by 1960.

Only in the last few years have the possibilities of using this ash as a raw material in building been investigated systematically, but now research has shown that extensive commercial development may well be undertaken, the most promising fields being the mixing of fuel ash with clay to produce bricks; the replacement of part of the cement, or sand, in concrete; the making of concrete-type building blocks, and the production of a light-weight aggregate by sintering.

Experimental work carried out at the Building Research Station and certain firms shows that good bricks can be made from pulverised fuel ash and clay in the proportions of 80–90 per cent to 10–20 per cent, provided the clay is of the plastic kind. Members will recollect that this investigation was mentioned by Mr. W. A. Allen [4] at the Torquay Conference. The exhibition at the R.I.B.A. showed several samples of bricks in a variety of good colours and textures.

It is somewhat unusual to find an existing brickworks near enough to a power station to avoid wheeled transport of the ash; also, the ash is much the bulkier component of the bricks. Therefore it is likely to be cheaper to bring the clay to the ash than vice versa. Obviously the best solution is



Flats at Parkleys, Ham Common. 4 in. Thermalite block walling has been used in panel walls behind weather-hung tiling. Architect: Eric Lyons [F]

to erect a brickworks near or at a power station, preferably in the vicinity of a big market for bricks. One such position is at Rye House, Hoddesdon, and plans for the development on a site which is available there are in course of preparation. Plans for similar developments elsewhere are being investigated by brickmaking firms.

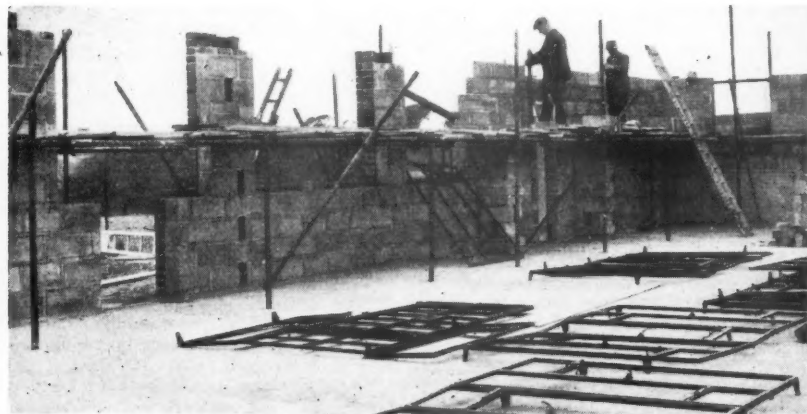
The Central Electricity Research Laboratories have been experimenting with the use of pulverised fuel ash in place of cement and find that if up to 20 per cent of the cement is replaced by ash in making concrete, the strength at first will be rather lower than in the case of ordinary concretes, but the strength increases with time until after three months the two are equal. This slower strengthening has certain advantages in mass work, if the concrete has not to bear early loads, because compared with straight Portland cement concrete a mix containing ash gives off less heat and therefore the temperature gradients across large masses of concrete are smaller, thereby reducing the danger of surface cracking. Users say that there is less segregation of aggregate and that concretes

containing ash are more resistant to the action of sulphates and of sea water. The uses of fly-ash in any large national road-building programme could save cement and money.

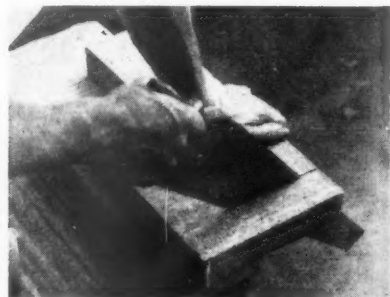
Fly-ash has characteristics closely resembling the natural pozzalanas which are found in the vicinity of Rome and which the Romans used in their mass concrete structures. These pozzalanas are of volcanic origin. There is therefore something of a precedent for the use of fly-ash in modern concrete.

Building blocks containing pulverised fuel ash are now being made, and names including Thermalite, Melcrete, Janblock and Licon will occur to readers; the aim of such products is to secure speedier, cheaper and perhaps better building, higher thermal insulation, lighter loads to transport and easier and better finishing or facing. The blocks hold nails well and can be sawn. This use could in time absorb a high proportion of the output of some power stations.

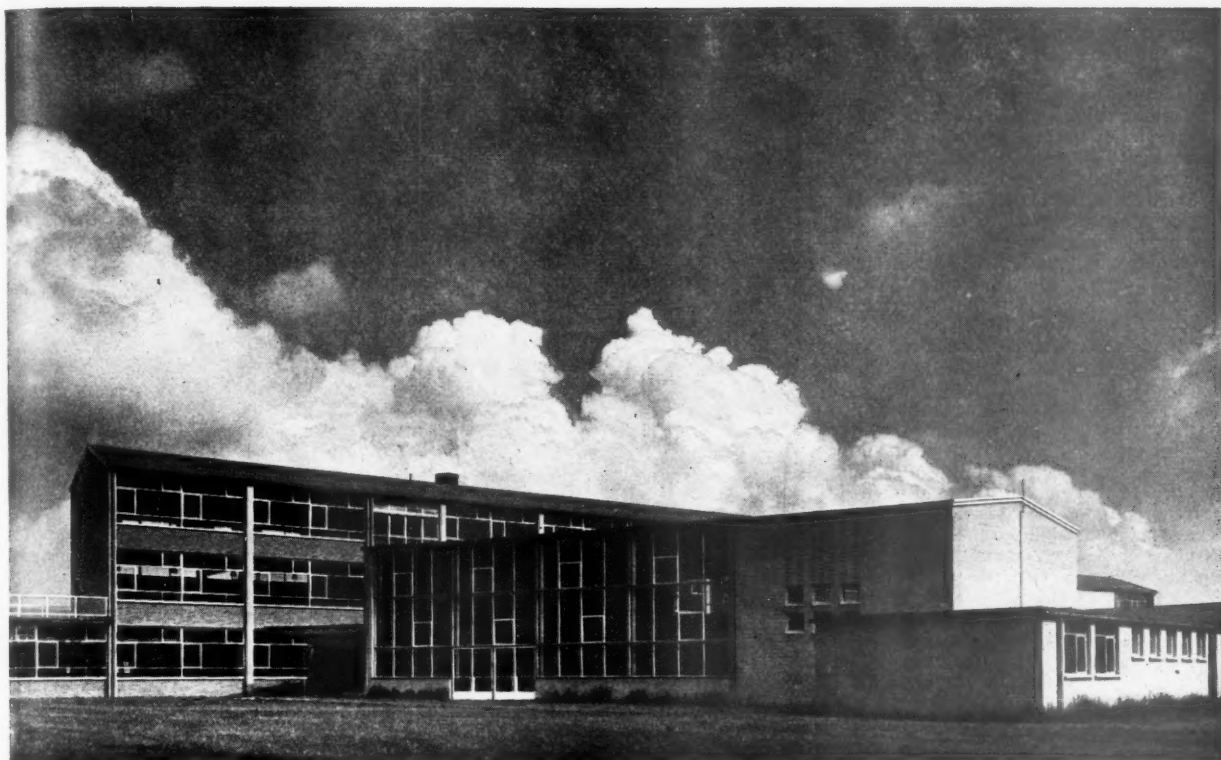
By the sintering process pulverised fuel ash can be made into a light-weight aggregate about half the weight of gravel. Concrete made with it has not the load-bearing qualities of that made with the usual aggregates, but there are obvious uses for light-weight concrete such as the covering of steelwork.



Thermalite building blocks used as the inner leaf in a typical industrial building



Pulverised fuel ash blocks can be easily sawn

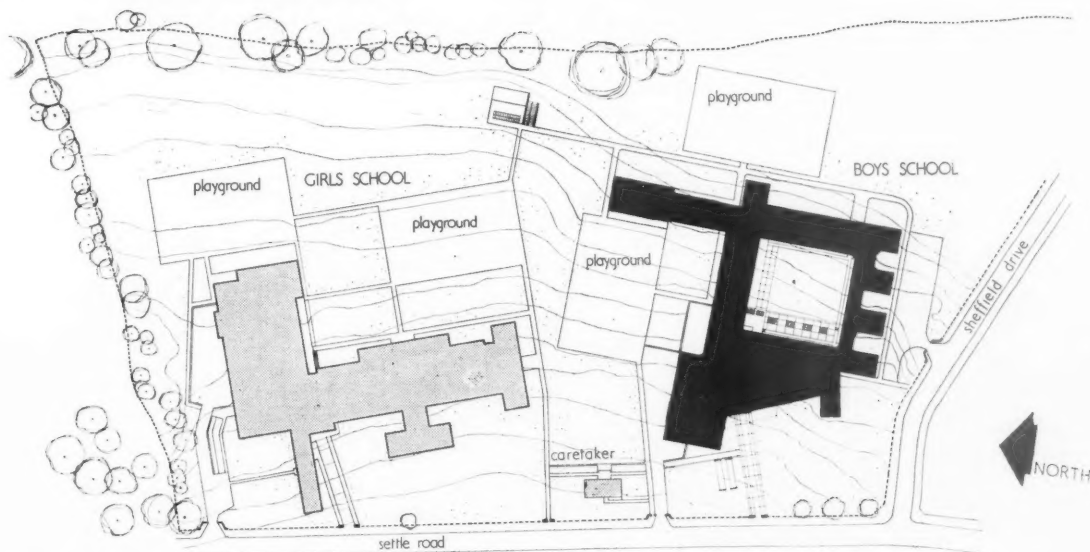


General view of the assembly hall and classroom block

## Harrowfield Secondary Boys' School, Essex

Architects: Richard Sheppard [F] and Partners

County Architect: H. Conolly [F]



Block plan. The girls' school has also been completed

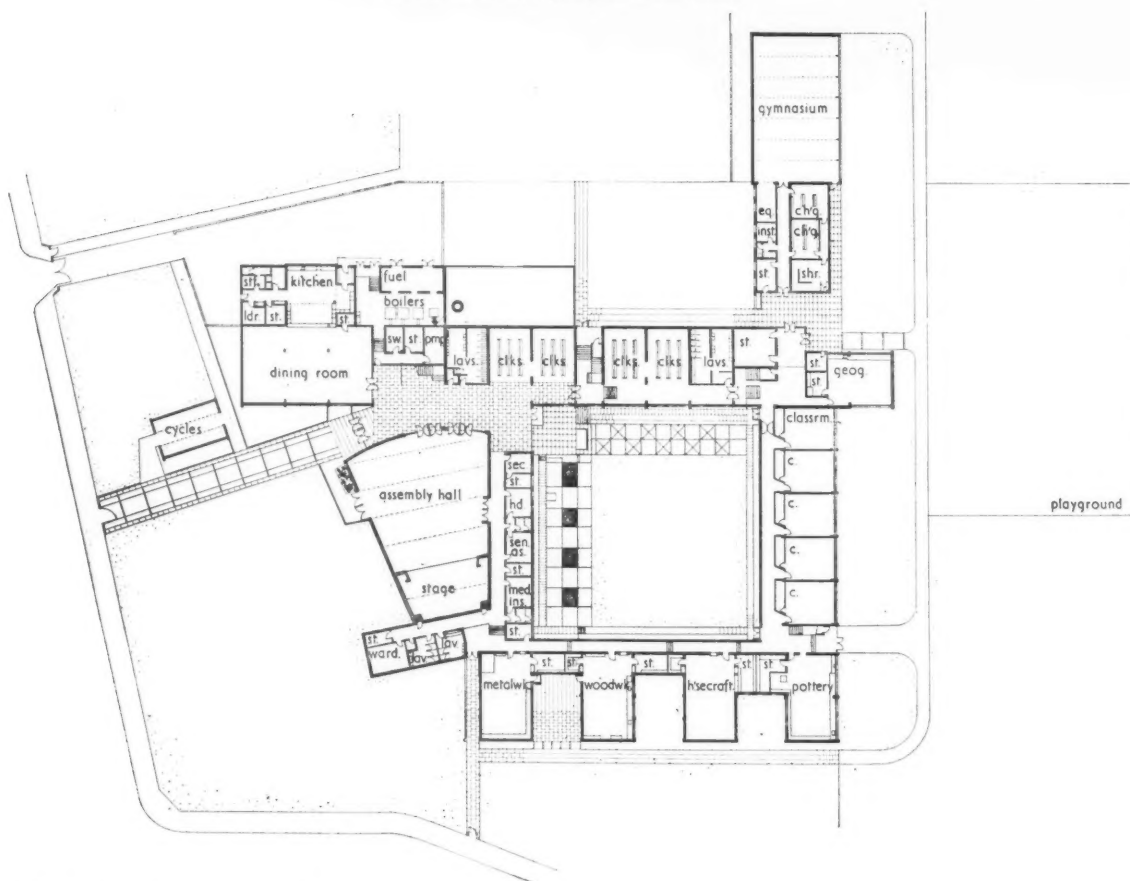
THIS SCHOOL was awarded the R.I.B.A. Architecture Bronze Medal for the three-year period ended 31 December 1954 in the area of the Essex, Cambridge and Hertfordshire Society of Architects. It is used also as an evening college and the assembly hall is licensed for public performances. The school formed part of the 1950-51 school building programme and was built to accommodate 680 children from the London County Council post-war housing estate on Harold Hill near Romford, Essex.

The layout of the school was arranged round a central courtyard so as to take advantage of the fall in the ground from west to east. None of the classrooms face north and the craft rooms, science laboratories and workshops are lighted from both sides. In the 2 and 3 storey classroom blocks there is staircase access but a good deal of stair climbing is avoided by the provision of a linking corridor at first floor level. The assembly hall is fan-shaped and has proved to be acoustically satisfactory. It has been found that it can accommodate a large audience within comfortable hearing distance of children's voices coming from the stage.

The gymnasium and assembly hall are constructed with welded steel portal frames

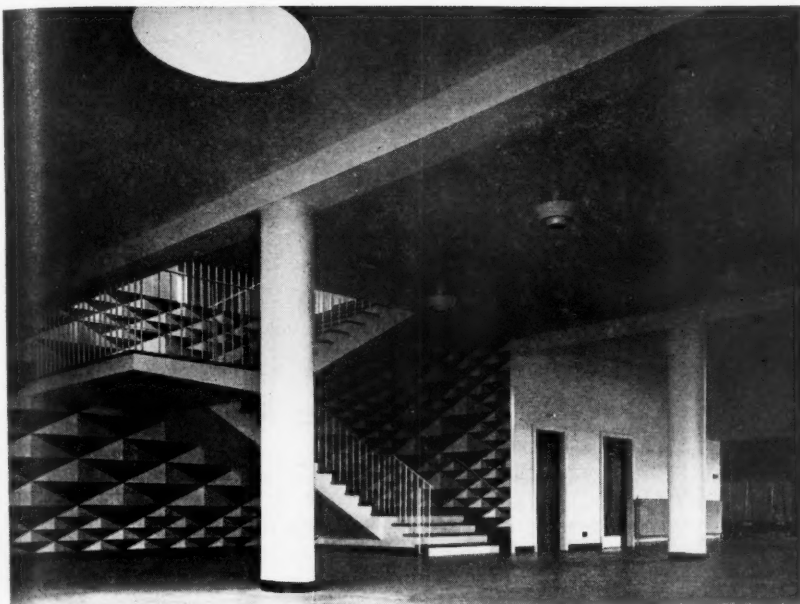


View of the 2 and 3 storey classroom blocks

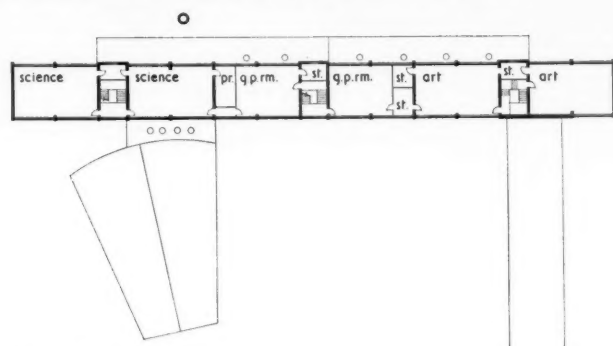


The plan of the school at ground floor level

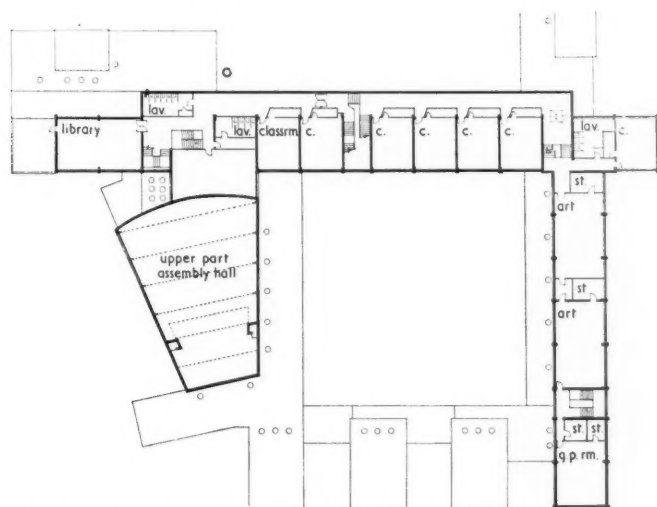




The entrance hall and main staircase, showing the decorative tile panels



The plan at second floor level



The plan at first floor level

and wood-wool covering slabs but elsewhere the system of construction is based on brick piers or cross-walls at 21 ft. centres. Hollow tile floors rest either on the walls or on reinforced concrete beams spanning between the piers. It was originally intended to use steel construction for the roofs of the 2 and 3-storey blocks but owing to shortage of steel the construction was changed to hardwood trussed purlins carrying common rafters at 2 ft. centres.

Pale straw-coloured flint facing bricks have been used for the piers and end walls, with reddish or purple-brown bricks for the non-load-bearing panels under the windows. In order to emphasise the non-load-bearing character of these panels it was at first intended to use precast concrete slabs but it was found cheaper to use bricks; they would probably be more durable as well as being easier and no doubt quicker to fix, and no appreciable difference to the structure would be made by the slight extra weight. Slate-grey bricks have been used for the circular chimney stack of the boiler house.

The finishes comprise quarter-sawn beech blocks for the flooring of the practical rooms and corridors and Muhuhu blocks in the assembly hall and this wood, in strip form, has been used for the stage. The gymnasium is floored in Loliondo strip, the classrooms in Accotile and the staff rooms in cork tile.

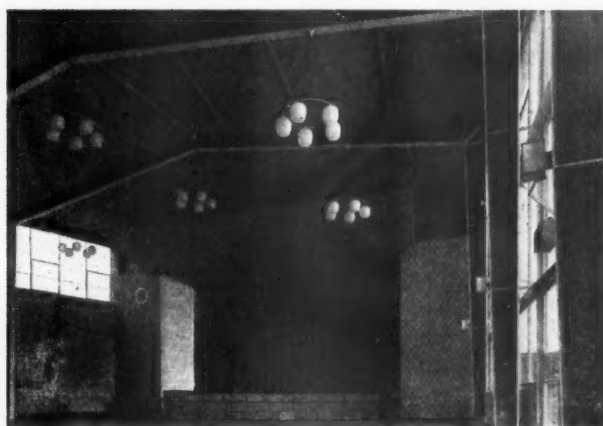
The walls throughout have been plastered and painted, in most cases with emulsion paints selected from the Archrome range of colours. Acoustic tiles have been used for the finish to the ceilings in the dining hall and workshops, and these tiles have also been applied to the curved end wall of the assembly hall.

The walls behind and flanking the main staircase are finished with an arrangement of plain and two-colour tiles forming a decorative panel design in green, yellow, red and white. The treads of the stairs are in hardwood, the risers being finished in white glazed tiles.

The timber screens and external doors have been made in clear varnished West African mahogany.

Low pressure hot water is the system by which the building is heated, principally by radiators but also by convectors in some of the practical rooms. The mechanical services include forced extracts from the assembly hall and kitchen, the metalwork forges and fume cupboards, and from a gas-fired pottery kiln. A fully-equipped switchboard for the stage is included in the electrical services.

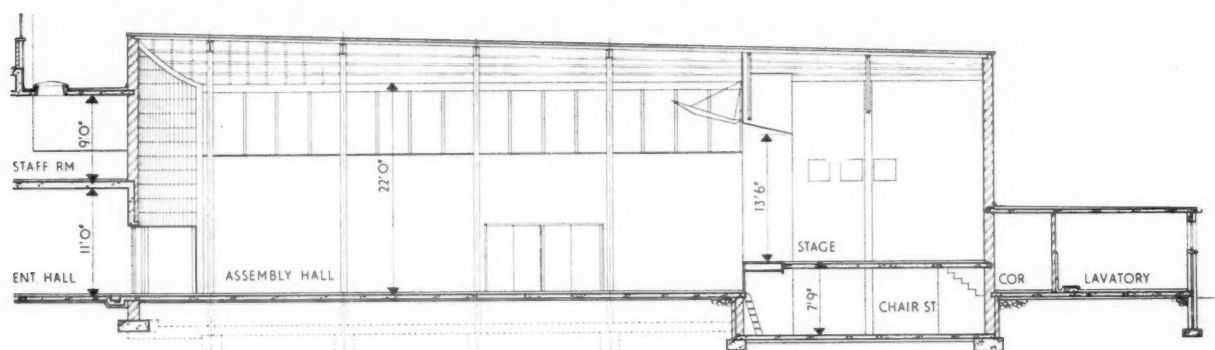
On a contract price in September 1951 the net cost of the school works out at less than £220 per place, which represents just over 52s. a sq. ft. of floor space. The economy of the system of construction that has been used is confirmed by the fact that at a similar school on a site in the vicinity, for which tenders were obtained nearly a year later in July 1952, the price per sq. ft.



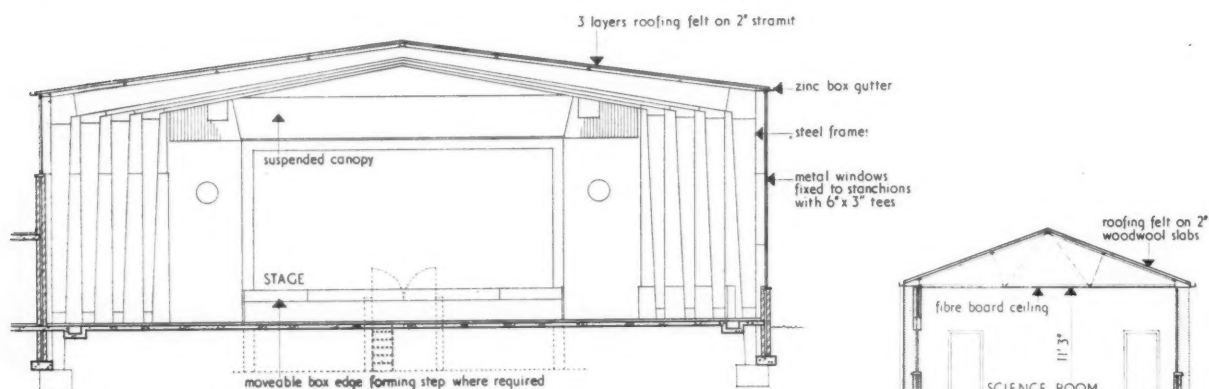
The assembly hall and proscenium



The dining room



Longitudinal section through the assembly hall and stage

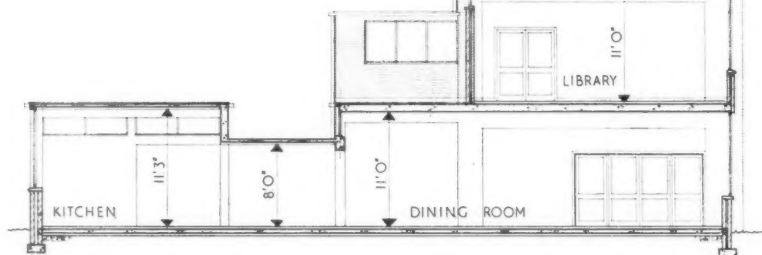


Above: transverse section through the assembly hall  
Right: section through the kitchen and 3-storey block

came to about 53s. 6d. and at almost the same cost per place.

Messrs. Ove Arup and Partners were the consulting structural engineers and the general contractors were Messrs. A. E. Symes Ltd.

The plan blocks illustrating this article have been lent by the ARCHITECT AND BUILDING NEWS.



# The Design of Clinics and Out-Patient Departments

AT THE CONFERENCE which was organised by the Royal Society of Health with the co-operation of the R.I.B.A. and held on 16 November, two papers were contributed by architects. The following are extracts from the papers which were delivered by Mr. D. A. Goldfinch, Dipl.T.P. [F], and Mr. Alan H. Devereux [F] respectively.

## HEALTH CENTRES

Mr. Goldfinch said it was a matter for regret that the wide horizon envisaged by the National Health Service Act in respect of preventive and curative centres had not yet been reached. However, a few health centres had been erected and were worthy of study. The Woodberry Down experiment of the L.C.C. provided extensive and well-planned accommodation for maternity and child welfare, school general and dental, psychiatric, immunisation and chiropody clinics, general practitioner and specialist consultant services as well as X-ray, remedial gymnasium and physiotherapy service available to all departments. The centre at Sighthill, Edinburgh, was an experimental grouping of child welfare, school health and dental services, independent general practitioners and a public dental service. The grouping permitted a co-operation and interlinking of the various interests. The Nuffield Diagnostic Centre at Corby was not a local authority project and although providing facilities for a general practitioner clinic was of greater interest to the out-patient department planner.

On the subject of the maternity and child welfare centre Mr. Goldfinch suggested the following planning points:

**Maternity and Child Welfare Centre.** In this field the local authority possibly reaches the greater part of the population, and the following points should receive the architect's detailed attention in relation to the various clinic sessions.

**Ante-Natal Clinic.** For the registration of mothers on their first visit, a small office adjacent to the entrance or waiting hall should be provided. The waiting hall should include facilities for the sale of vitamin foods and for the preparation of light refreshments, while lavatory accommodation for one sex must be provided. From the waiting hall the mother should have access to the sister's office for personal advice, with good circulation to the consulting room, which should be planned with a minimum of three cubicles.

**Child Welfare Clinic.** The mother is encouraged to bring children under the age of five years to the clinic for weighing and general health advice. From the waiting hall circulation is required to a weighing room of suitable size to accommodate nine mothers with babies, together with a large table and weighing machines. A sluice sink should be provided in this room, and an

adjacent room for the filing of record cards should be provided. It may be necessary for the mother to give the child a test feed. For this purpose two or three cubicles should be provided in a room having access from the weighing room. In this room the health visitor may give advice to mothers on baby care and other problems. Planning should enable the mother and child to pass to the consulting room, or return to the waiting hall.

**Immunisation Clinic.** At this clinic children will receive immunisation or vaccination against infectious diseases, and the session may be held in one of the rooms planned for another use, provided it has access from the waiting hall.

**Health Education.** Lectures and demonstrations will be given from time to time with a view to the general education of the public in matters affecting family health. The waiting hall should, therefore, include provision for the showing of cine-films and platform demonstrations in order to make it suitable for this purpose, while a room should also be provided for mothercraft demonstrations.

Mothers will have to bring their children to the building and provision must be made for a nursery for such toddlers. In connection with this, provision must be made for infants' lavatories, toy store, etc., and a play garden with sand-pit, swings and similar apparatus should be incorporated where possible.

**School Clinics.** Mr. Goldfinch said that in these the architect was planning to overcome inherent child fear and to facilitate a simplification of medical examinations and treatments to that end. In this the planning of Woodberry Down Health Centre was worthy of study.

In the dental clinic for school children, expectant and nursing mothers and babies it was essential to encourage confidence and alleviate fear. He continued:

The accommodation will incorporate adequate waiting room with toilet facilities, and experience has shown that this is a field for creating a diversionary interest by careful use of murals, aquarium, etc. Dental surgeries should be planned in proximity to a recovery room, which should be equipped with a divan for general anaesthetic cases. A separate exit from the recovery room should be planned to avoid patients passing back through the waiting room. Separate surgeries are to be preferred by patients to the large surgery with several screened dental units. One of the surgeries should be equipped with a dental X-ray set, and it should be noted that the installation of a dental unit does not necessitate costly lead or barium plaster insulation.

A small dental laboratory, or workshop, may be required and if orthodontic work is to be undertaken in school clinics,

adequate storage for models is required as well as a work-bench with lathe. Accommodation for classes by the oral hygienist might also be incorporated.

After giving schedules of accommodation for chest clinics and mass radiography centres, Mr. Goldfinch discussed materials and finishes. He said:

In general, building materials and finishes should be similar to those required for a hospital standard of hygiene. Experience has shown that the more traditional terrazzo (in-situ or tile form), rubber (sheet or tile), and hard wood block are suitable for all clinic purposes, and are to be preferred to the asphaltic base tiles.

Special wall finish might be restricted to glazed tiles as a dado or splash backs in certain instances, walls usually being of hard plaster decorated with a semi-gloss enamel. Blackboard paint dados are desirable in waiting rooms for children of the younger age group.

Careful consideration should be given to the application of colour, bearing in mind that the accommodation is in occupation for short periods only, and stronger, lively colours may therefore be utilised.

Attention should be paid to sound insulation for consulting rooms, and to the use of acoustic ceiling tiles over areas of likely noise production such as waiting rooms, children's playrooms, etc.

In large or combined clinic buildings consideration might be given to the use of different colour symbols, or a diagrammatic mural plan on the wall of the entrance hall, to facilitate the location of clinic suites or traffic routes by patients.

The use of large areas of glass or curtain walling may be suitable in contemporary design for schools, where great emphasis must be placed upon the daylight factor, but in clinic design the privacy of the patient (both actual and psychological) must be of first consideration as well as comfort in locations where the undress state is necessary.

## OUT-PATIENT DEPARTMENTS

Mr. Devereux said that very few British hospitals had adequate facilities for the treatment of out-patients because the out-patient service, as we now understood it, was a recent creation. Development had been so rapid that no process of assimilation had been structurally possible.

It seemed to be generally accepted today that a separate building, independent of the main hospital, was required to allow expansion. Nevertheless, the out-patient department should be integrated into the general layout to avoid the extravagance of operation which would result from complete isolation.

Mr. Devereux then discussed certain design problems in terms of the large general hospital. He said:

Patients and visitors must be able to enter and leave without penetrating into



other parts of the hospital, but as the out-patient department is administered centrally and in general is staffed by the same personnel some vital connection is necessary between the two. Patients as well as staff may have need of special facilities which cannot economically be made available within the department, e.g. X-ray and pathological investigation. To duplicate these and other service departments existing in the main hospital would usually be an unwarranted extravagance. One should also bear in mind that certain clinics may be shared by 'in' and 'out' patients, e.g. physical medicine, occupational therapy and dentistry.

Everyone knows the confusion in many out-patient departments, due more often than not to lack of coherent planning. A careful approach to the problems of circulation can solve many of the difficulties which face an administrator. Careful planning is necessary to ensure that patients are directed effortlessly and easily to their required destinations. The entrance should of course be separate.

In the reception area or directly off it should be the registration and appointments clerks, and adjacent the records department and almoners' offices. All new patients should come to this central area where all administrative requirements are met before going to their waiting area.

Apart from being socially undesirable, the traditional large waiting hall, seating a hundred or more patients, is bad from the point of view of administration. There is no need for the patient to wait near the reception area. It is better that he should be directed to a small waiting room within the clinic which he is attending, and whence he can be called in for examination without misunderstanding or delay. For this reason the ideal of a single storey structure will be unrealisable in a large department—vertical circulation by lift is preferable to long and confusing corridors.

Another problem which concerns planning is that of expansion. In no department of a hospital is this problem so acute as in the out-patient department. The Ministry of Health Report for the year 1949-50 speaks of 'a separate building which can be expanded or altered at need'. Unfortunately this is easier said than done, for any building is by nature inflexible unless it is specially designed with this specific object in mind. The Report of the Nuffield Trust warns against the risks of 'too close tailoring'. In this connection, however, it does not refer to the possibilities of 'flexible' planning and construction, a system which involves detailed modular planning and a high standard of structural design and technique, but one which, from practical experience, seems to me to offer the only real solution to the problem of structural alteration. 'Flexible' construction may be initially costly but ultimately an excellent investment and insurance.

**Planning for the Consultant.** In essence, the planning requirements are a group of consultative suites sufficient in number to cope with the intake of patients and the

requirements of the various specialists who run the clinics. In a small hospital a few of such suites simply planned off a central administration and waiting area may still be adequate to meet the needs of the community, but in a large hospital the problem of providing an orderly arrangement of these suites is a difficult one.

In a department where specialist clinics are held only once or twice during the week the architect is faced with the problem of planning a suite which is suited for general use. It will be too uneconomical of space to provide separate suites for occasional use, but on the other hand in a large hospital with daily clinics in the various specialties it is much more satisfactory and surely economical to do so.

It is only when the precise requirements are known that a proper proportion of the available space can be allotted to the various parts of the suite, i.e. consulting rooms, examination and treatment rooms, undressing cubicles, etc. Faulty planning of these compartments can lead to much waste of time of the consultant, to lack of continuity between consultation and examination and general inefficiency. There are, moreover, different approaches to treatment in the various specialties; in some, consultation may usually be lengthy; in others, practically non-existent; in some, patients may be required to undress in cubicles; in others, in the examination rooms; and in others not at all. There are, therefore, many advantages in the polyclinic arrangement, for local consideration can be given to the requirements of the specialties or even the individual consultants.

Consulting rooms should be pleasant with large windows which can be sheltered against glare and, where privacy is essential, should be protected against penetration of sound. An X-ray viewing box should be conveniently placed and the small amount of furniture required should be simple and attractive. Examination areas should be hygienic with good natural light and ventilation.

**Planning for the Nurse.** Planning for the nurse should be one of the foremost considerations; many past mistakes could have been avoided if architect and nurse had got together in co-operation.

There are many responsibilities on the nurse's shoulders and it is important that her energies and her time are conserved by reducing the steps she has to take. Hence the reason for siting the waiting spaces as close as possible to the consulting rooms. Each examination suite should have the necessary sterilising equipment, as well as sinks, on the spot and not rely on the use of a special sterilising room which may necessarily be some distance away. It is false economy to cut down on the amount of such equipment. Helping the nurse in this way assists the consultant and the patient; and, indirectly, the administration. It is also important to provide many other facilities to assist the nurses' work, e.g. arrangements for easy and hygienic removal of plasters, dressings, soiled linen, etc.

The surfaces of floors and walls must, of course, be hygienic. Plastered walls, even if gloss painted, are not ideal and compare unfavourably with tiles and plastics. Stainless steel sink units and plastic tops are to be preferred to the traditional use of wood.

Equipment should be the best quality obtainable and be labour-saving in operation; there seems to be no reason why it should not be simplified in design and made more beautiful to look at.

**Planning for the Patient.** The needs of the patient are not only physical but psychological and spiritual. Let us not belittle the importance of modern techniques in structure or the achievements of technology and science that make a modern building. They can provide, to a degree undreamt of by our forefathers, practically everything demanded in a hospital for its efficiency. But they are not in themselves sufficient; they cannot evoke the emotional response of the patient—peace, security and a sense of well-being. There must be sensitivity and artistic perception and, above all, a humanistic approach.

The first impression gained on entering a new out-patient building should be one of friendly welcome. The treatment of the entrance hall should be human in scale and sympathetic to the home environment. There should be no queueing or waiting for registration in a crowded hall or corridor, but an informal reception, preferably in a quiet room or recess off the entrance hall. For patients who arrive early and for visitors there should be a comfortable lounge where light refreshments can be obtained. This should be a beautiful room, preferably without any suggestion of sterility.

These comments may apply also to all the waiting rooms, where patients are naturally in rather an anxious frame of mind. That is why I personally am opposed to any form of audible calling system, which cannot but produce a feeling of tenseness and anxiety.

No large out-patient department would be complete without a special waiting room for children.

In addition, the ordinary physical needs of the patient must be catered for—lavatories conveniently placed and certainly a public telephone within easy reach. And some thought should be given to the patient in the wheeled chair.

Within the consultative suites, even in the treatment rooms where sterility must be the first essential, the patient's mental well-being can be considered without detriment to the functional requirements. It is still possible with unsympathetic materials to introduce pleasant colour and some relief from terrazzo and stainless steel.

I have tried to show how design can cater for the mental health of the patient, but attention has been given only to the inside of the building. Most architects will agree that if the outside faithfully reflects the inside, it will have the same quality and evoke the same feelings, so the building should be designed from the inside out. Humanity should be the keynote.

# The A.B.S. Old People's Homes Competition

The Architects' Benevolent Society are announcing details of their architectural competition for the design of homes for old people for which the Centenary Fund, now standing at £19,600, was started in October 1950. The site is at East Horsley in Surrey.

The Assessors are Mr. H. S. Goodhart-Rendel [F], Mr. A. W. Kenyon, C.B.E. [F], and Mr. G. Grenfell Baines [A]. The author of the design placed first receives £100 and an additional £75 may be awarded at the discretion of the Assessors between not more than three competitors.

The whole scheme will consist of twenty dwellings, a warden's house and a tenants' common room, not exceeding £46,000. The A.B.S. intend to proceed with the first section of the scheme consisting of six dwellings and a portion of the warden's accommodation.

Copies of the conditions and a site plan which will be available early in December may be obtained from the Secretary, the A.B.S., 66 Portland Place, W.1, on receipt of a deposit of £1 1s. Sending-in day is 5 April and designs must be sent to the Building Centre who have kindly consented to hold the exhibition of designs.

So much for the basic facts of the competition. Attached to the Conditions of Competition are notes for the guidance of competitors. These are obviously the result of much thought and study. These 'homes' are not to be an institution, but a pleasant group of houses, of various sizes, for architects and the widows of architects. The notes have an air of humanity and common sense. Here are some extracts:

'The object of the competition is to obtain a design which will provide, imaginatively and economically, living conditions for various types of dwellings for old people in self-contained homes where, surrounded by their own treasured possessions, the occupants may enjoy normal home life.'

'Many of the occupants will naturally be house-proud. Most occupants will have furniture of their own. . . .'

'It is important to limit maintenance costs and therefore every care should be taken to include materials . . . which require the minimum of upkeep and repair', and ' . . . materials which will not go shabby quickly but rather improve with age'.

'Some occupants may prefer seclusion, but others, who might find the isolation of a single dwelling somewhat lonely, will no doubt appreciate having neighbours near to them. Some would like their own small gardens . . .'



'The Promoters . . . will look for a scheme which provides a graceful layout with a degree of architectural unity and at the same time avoids any appearance of an institution.'

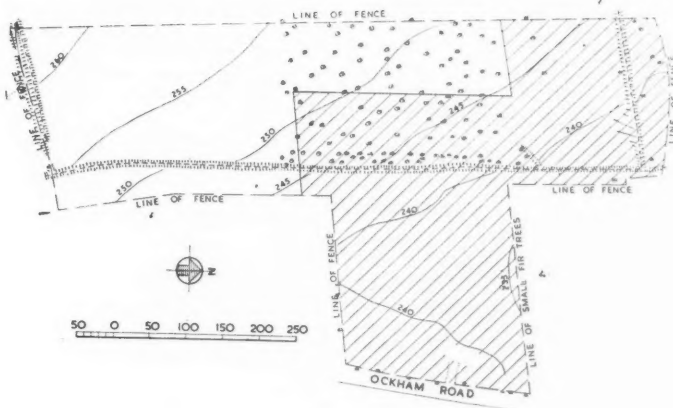
The site, of which we reproduce a key plan and a sketch, specially drawn for us by Mr. A. D. Coward [F], is Tee shaped and well wooded. A portion of the site is to be reserved as woodland, by agreement with the Forestry Commission, so that the trees on it can mature. The front portion towards the road is fairly level, the back and more wooded portion rising gently towards the west. It is situated in a pleasant village with shops, church, post office and inn not far distant.

This competition is important because any one of us may be glad, in old age, to find a home there. The records of the A.B.S. contain not a few cases of once prosperous architects who fell on evil days through illness or misfortune. Loss of sight or physical infirmity can afflict anyone and, while the existence of the Welfare State avoids the risk of actual destitution in such cases, the A.B.S. is too often faced with the problem, in an acute form, of finding even reasonably comfortable living accommodation for its infirm and aged beneficiaries. Surrounded by neighbours of his own calling and mental outlook, how

different will the aged architect find these comfortable homes from the lodgings in suburban streets, single rooms even, among neighbours with whom he has little or nothing in common—in short, accommodation of kinds which hitherto the A.B.S. has been forced to find.

It will not have escaped the eye of the observant reader that there is an appreciable gap between the £19,600 so far collected and the £46,000 needed for the whole scheme, in consequence of which only a part can at present be proceeded with. This is therefore the occasion for another special effort to raise funds for this most worthy of causes: one which Mr. Graham Henderson, when President of the A.B.S., described as a 'true architectural solution to an architectural problem'.

The effort of those who organise the Annual Ball in aid of the fund for these homes is praiseworthy. But this should not be the only source of revenue, good though it is; after all, it is mainly a London effort. Some, but not all, of the Allied Societies have been active in raising money both for the general funds of the A.B.S. and for the homes. Here is a chance for them to help narrow that gap. Contributions by individual members, large or small, will also be gratefully received.



# Review of Construction and Materials

*This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.*

*The Director, The Building Research Station, Garston, near Watford, Herts.*

*Telephone: Garston 2246.*

*The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.*

*Telephone: Busby 1171.*

*The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.*

*Telephone: Princes Risborough 101.*

*The Director, The British Standards Institution, 2 Park Street, London, W.1.*

*Telephone: Mayfair 9000.*

*The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.*

*Telephone: Museum 5400 (10 lines).*

*The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.*

*Telephone: Douglas 0372.*

**Fire Protection of Converted Buildings.** The Fire Protection Association have issued their booklet No. 27, *Conversion of Buildings*, in which they treat the problem of the large house that is too big to be now run as a private dwelling-house and is therefore being converted into offices, a school, hospital, research establishment or similar occupancy.

Although in such cases the local bye-laws must be complied with, yet the conversion may introduce fire hazards that are not excluded in satisfying the bye-laws. The normal dwelling-house constructed with brick walls, timber floors and lath and plaster ceilings probably possesses half an hour's resistance against fire, but a one hour's resistance would be desirable in certain cases, such as boarding schools and nursing homes, especially in regard to the ceilings of rooms used as kitchens or boiler rooms, so as to retard the spread of fire to upper floors.

Where the new occupancy involves a greater number of occupants than before, the existing staircases may be inadequate as means of escape and additional means should be provided, but the booklet does not recommend external steel staircases. If, however, they are used, the windows adjacent to them should be glazed with wired glass in fixed metal frames. The means of escape should be wide enough to permit the escape of all occupants within 2½ minutes, and special consideration should be given to buildings converted into hospitals or nursing homes, where many of the occupants may be unable to escape without assistance.

A copy of the booklet will be supplied free on application to the Secretary of the Fire Protection Association, 15 Queen Street, London, E.C.4.

**A New Washbasin.** A washbasin that has been accepted by the Council of Industrial Design for inclusion in *DESIGN REVIEW* is called the Debdale when it is on a pedestal and the Debonex if it is supported on brackets or hangers. The basin has been designed to be smooth, easy to clean and of good appearance.

One point about the basin is that the overflow is placed in the front, so that this unattractive feature is not seen at first sight. It is made to British Standard

specification in sizes 25 in. by 18 in. and 22 in. by 16 in. overall, in vitreous china. Although the bowl is of ample size the width of ledge is sufficient to counteract over-spill at the sides, and an anti-splash rim in front performs the same duty. The waste is of the pop-up type.

The basin can be obtained in white or in any of the revised range of six 'Armitage' colours. The manufacturers are Messrs. Edward Johns and Company Ltd., Armitage Sanitary Pottery, near Rugeley, Staffordshire.

**Economy in the Use of Cement.** The Ministry of Works announce that in the placing of 124,482 cu. yds. of concrete on 70 sites they have saved 3,630 tons of cement by using concrete placed according to guaranteed strength specifications and mix design methods instead of in the manner that earlier standard specifications would have required. For all quality-controlled concrete the new guaranteed strength standards call for compaction by high-frequency vibration and the Ministry note with satisfaction that contractors are using vibration even when it is not specified.

The vibrating roller seems to be the most suitable process for compacting thin slabs in contact with the ground and this technique is now being adopted for floors, whereas it used to be employed only on roads.

The Ministry now have an ultra-sonic instrument for testing the strength and quality of concrete after it has been placed. This instrument has proved satisfactory in the case of steelwork and its potentialities are being explored by using it on sites of different types.

On the 70 sites, 117 different concrete mixes were needed and on all but 6 sites they were designed by the Ministry's engineers at the request of the contractors, but the Ministry would like to see more contractors designing these mixes themselves to suit materials that are available locally.

**A Dual-purpose Boiler.** The complaint is sometimes made that boilers in a kitchen make it too warm in summer, even when well insulated, in which case the kitchen is not too warm in the winter. The new

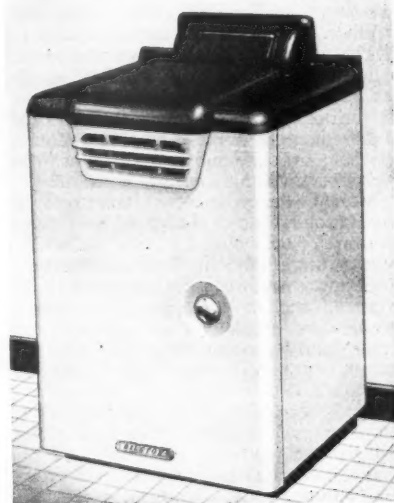


The Debdale washbasin

Bilston boiler aims at giving the best conditions in all seasons; this it does by adequate insulation and controllable convection, the warmed air passing into the room through a convection grille, and the supply of warmed air can be regulated. A thermostat controls the temperature of the water in the boiler. The ashpan slides in grooves; it is suspended clear of the floor and is designed to receive all ash without spilling. An insulated door conceals the working parts.

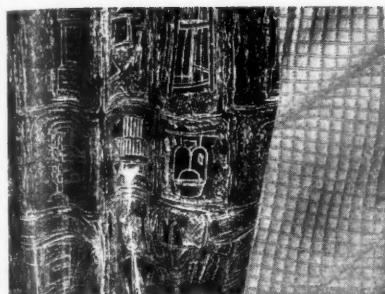
The boiler is finished in vitreous porcelain enamel, either ivory, white, green, pink or blue. The present price is £28, and the manufacturers are Messrs. Bilston Foundries Ltd., Bilston, Staffordshire.

**Cottons for Furnishing.** The Cotton Board Design and Style Centre, whose home is (naturally) in Manchester, staged briefly in October, at the Building Centre, its first London exhibition of cotton furnishing fabrics. We reproduce here illustrations of one or two of the exhibits which give some idea of the wide range not only of designs



The Bilston dual-purpose boiler





Cottage furniture in white line on charcoal; quilted effect, red on turquoise

in this fabric today—from the most striking 'contemporary' to the most sober of 'traditional'—but also of weight and texture, from the sheerest of prints to the solid, rough or smooth-finished materials designed for upholstery.

The hundred fabrics shown—all chosen for their 'trend-setting' qualities—were from current ranges and are now, or shortly will be, available in leading stores throughout the country. The Cotton Board says, moreover, that many of the firms whose products were displayed would be glad to collaborate with architects in the development of new types or variations of particular cloths for suitable contract schemes.

**'Tanalith' C Wood Preservative.** Messrs. Hickson's Timber Impregnation Company (G.B.) Ltd. have produced a new timber preservative to which they have given the name 'Tanalith' C. Their 'Tanalith' U is of course well known.

The history of the development and production of this new preservative is interesting and illustrates the many tests and detailed investigations that have to be made before a new product can be put on the market. Since the last war a large number of cooling towers have been erected by B.E.A. (now renamed Central Electricity Authority), in which hot water falls over a system of timber packing, often called louvres, and is cooled by the convection action of cool air entering at the base. These louvres were preserved with the two commercial water-borne preservatives then available, one of them being Wolman 'Tanalith' U. In some cases both preservatives failed to prolong the life of the timber to any great extent but the breakdown was clearly not due to the types of decay recognised at that time. Apparently the hot water, flowing almost continuously over the louvres, was causing some form of physical and chemical damage, against which toxic chemicals could have no effect.

The whole story is too long to tell here but, very briefly, the microscope revealed little of the new form of decay when longitudinal sections of the timber were inspected, but in a *transverse* section it was seen that cell walls appeared to have been cleanly and neatly punched through in several places. The implications of these as yet unidentified punch holes could not be ignored and Dr. Findlay, the mycologist

at the Forest Products Research Laboratory, began a long series of investigations in which Messrs. Hickson's mycologist collaborated. Finally *Chaetomium Globosum* was found to be one of several moulds which, under the excessively hot and wet conditions found in cooling towers, developed rapidly and wrought havoc in timber, although its ability to destroy timber had not until then been suspected. In preserved timber the commonly-known decay agencies were not able to function but the newly recognised and newly named *soft rot* fungi thrived.

Once the soft rots were established as wood destroyers the problem of protection became a practical, though laborious and long-drawn-out proposition, and at length 'Tanalith' C was produced as a commercial product in the form of a free flowing powder which can be stored for long periods without turning into a paste.

'Tanalith' C contains copper, chromium and arsenic, it has high fixation properties and will give protection to timber against soft rots as well as against the long-known agencies. Treated timber may be painted or glued and the preparation is less corrosive to metals than tap water.

Messrs. Hickson's Timber Impregnation Company (G.B.) Ltd. have their head office at Castleford, Yorkshire, and their London office at 36 Victoria Street, S.W.1.

**A New Space Heater.** To the many methods of applying electricity to space heating a new one has been added recently. This consists of a tough heat-resisting glass tube in which is a spirally-wound nickel-chrome heating element wire which operates at black heat. The glass tubing is white.

As the glass tube has a low co-efficient of expansion there is little risk of breakage from thermal shock and it has been found that the glass is not affected by contact with the hot element even when the ambient temperature is near freezing point. It is claimed that the glass will withstand a maximum temperature of 600 degrees C. The loading per foot can be varied by using different diameters of wire or adjusting the total length of the tubing in one series circuit of the system, or by both methods. The length of tubing can be varied from about 5 ft. at 200 W per foot up to about 80 ft. at 25 W per foot.

One low-loading application is for the prevention of humidity changes in shop windows; for houses, offices and other premises the system can be spread out to give dissipation of heat throughout the perimeter of the space to be heated, and the tubing can be bent to pass round corners. Thus it can be installed above, say, a picture rail or cornice or skirting. It can also be mounted independently on a panel such as a fire screen.

The sole manufacturers are Messrs. A. and R. Electric Company Ltd., of 1 Bruce Avenue, Shepperton, Middlesex, who at present are the only firm carrying out installations, but they state that the system can be simply installed after first instructions. Present prices quoted by the firm for



Abstract architectural print; upholstery cloth in beige, yellow and grey stripes

supply and installation in the London area are 12s. 6d. per ft. and thermostats at 50s. each, where points already exist.

**Thatching Specifications.** The Rural Industries Bureau, 35 Camp Road, Wimbledon, S.W.19, have issued a pamphlet giving specifications that are considered necessary for first-class thatching in Norfolk reed, combed wheat reed, and long straw.

The methods of measuring for thatch and of calculating the cost are given in the pamphlet, with a glossary of thatching terms.

Architects interested in thatching should apply to the Bureau for a copy of the pamphlet, which is issued free of charge.

#### British Standards Recently Published

**B.S. 2639: 1955. School Dining Tables and Chairs.** The drafting of this British Standard has been influenced by the two principles (1) that school furniture should be designed specially to meet the needs of children, and (2) that as far as possible each child should be given a chair of the right size and a table of the right height for the chair. The new Standard deals with the design and construction of tables and chairs primarily for use in school dining-rooms but also suitable for classrooms, and is the first of a series for the whole range of school furniture.

The Standard sets forth five sizes of dining chairs and tables to cover the needs of children between the ages of five and sixteen years. Price 4s.

**B.S. 187: 1955. Sandlime (calcium silicate) Bricks.** Improvements suggested by experience have been introduced into this revised Standard. The bricks dealt with are those made from a mixture of siliceous sand or crushed siliceous rock and lime; hence their name 'sandlime' or 'calcium silicate' bricks. The note on mortars for use with these bricks has been revised. Price 2s. 6d.



# Revision of R.I.B.A. Bye-laws 1955

**Special General Meeting, Tuesday 20 December 1955 at 6 p.m.** Notice is hereby given that a Special General Meeting of the Royal Institute of British Architects will be held on Tuesday 20 December 1955 for the purpose of considering the Council's recommendations for the revision of the Bye-laws, resulting from the report of the Committee on the Constitution of the Council which was published in the JOURNAL for May 1955. The relevant Bye-laws as they exist at present and the proposed amendments (in italics) are given below:—

## Subscriptions and contributions when due, &c.

18. Annual subscriptions or contributions shall be paid in advance; and, except as provided by Bye-law 17, shall be due on the first day of January in each year. Every member, Subscriber or Student elected after the thirty-first day of October in any year shall not, after having paid his entrance fee (if any) and first annual subscription or contribution as hereinbefore provided, be required to pay any further subscription or contribution before the first day of the January twelvemonth subsequent to his election.

*For 'thirty-first day of October' substitute 'thirtieth day of September'.*

## II. THE COUNCIL

### Constitution

28. (1) The Council shall consist of:—

(a) The President.

(b) Four Vice-Presidents of whom (i) one shall be a Fellow of the Royal Institute who is for the time being the Chairman of the Allied Societies Conference, (ii) two Fellows of the Royal Institute members of Council elected to the office of Vice-President by the Council, and (iii) one Fellow of the Royal Institute whether or not already a member of Council elected to the office of Vice-President by the Council.

(c) Two Past Presidents of the Royal Institute.

(d) An Honorary Secretary and an Honorary Treasurer elected to those offices by the Council from among the Fellows of the Royal Institute.

*(a)–(d), no change.*

(e) Eighteen Fellows as ordinary members of Council, nine Associates as Associate members of Council and one Licentiate in respect of the first 200 Licentiate members of the Royal Institute at the time of holding an election for Licentiate members of Council, a second Licentiate in respect of the next 800 Licentiate members at the

time aforesaid and a third Licentiate when the number of Licentiate members at the time aforesaid exceeds 1,000.

*(e) Nine Fellows as Fellow Members of Council, nine Associates as Associate Members of Council, three Licentiates as Licentiate Members of Council, and nine Corporate Members, irrespective of their class of membership, as Ordinary Members of Council, subject however to the transitional procedure for the first three years after the coming into force of this Bye-law as set out in Bye-law 34.*

(f) Twenty-four representatives of Societies in alliance with the Royal Institute within the United Kingdom or the Republic of Ireland distributed and selected as follows:—

(i) Six representatives from the Northern Province of England, which territory shall be deemed to include the Northern Architectural Association, the Manchester Society of Architects, the Liverpool Architectural Society, the York and East Yorkshire Architectural Society, the West Yorkshire Society of Architects, and the Sheffield, South Yorkshire and District Society of Architects and Surveyors.

(ii) Five representatives from the Midland Province of England, which territory shall be deemed to include the Birmingham and Five Counties Architectural Association, the Leicestershire and Rutland Society of Architects, the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects, the Nottingham, Derby and Lincoln Architectural Society, and the East Anglian Society of Architects.

(iii) Six representatives from the Southern Province of England, which territory shall be deemed to include the Devon and Cornwall Architectural Society, the Wessex Society of Architects, the Berks, Bucks and Oxon Architectural Association, the Hampshire and Isle of Wight Architectural Association, the Essex, Cambridge and Hertfordshire Society of Architects, and the South-Eastern Society of Architects.

(iv) Four representatives of Allied Societies in Scotland nominated by the Council of the Royal Incorporation of Architects in Scotland.

(v) One representative of Allied Societies in Wales nominated by the Council of the South Wales Institute of Architects.

(vi) Two representatives of Allied Societies in Ireland, nominated respectively by the Councils of the Royal Institute of the Architects of Ireland and the Royal Society of Ulster Architects.

Every such representative of an Allied Society must be a Fellow, an Associate or a Licentiate of the Royal Institute, and must be either the President of the Society which he represents or, in the event of the President's inability to act, a member

of the Council of such Society nominated by such Council.

(g) Five representatives of Societies in alliance with the Royal Institute overseas, that is to say, one representative nominated by the Council of each of the following, viz.:— The Royal Architectural Institute of Canada, the Royal Australian Institute of Architects, the New Zealand Institute of Architects, the Institute of South African Architects, and the Indian Institute of Architects.

Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Royal Institute who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid.

Every such representative of Allied Societies overseas must be a Fellow, Associate or Licentiate of the Royal Institute.

(h) One Fellow or Associate of the Royal Institute as representative of, and nominated by, the Council of the Architectural Association (London).

(i) One Fellow, Associate or Licentiate of the Royal Institute as representative of, and nominated by, the Association of Building Technicians.

(j) The Chairman of the Board of Architectural Education being a Fellow of the Royal Institute.

(k) The Chairman of the Royal Institute of British Architects Registration Committee being a Fellow of the Royal Institute.

(l) Two representatives of the Salaried and Official Architects' Committee, being Fellows, Associates or Licentiates of the Royal Institute.

*(f)–(l), no change.*

(2) Any member of Council may resign his office by notice in writing delivered to the Council.

*No change.*

### Eligibility to serve on the Council as Ordinary, Associate or Licentiate Member

33. Any Fellow shall be eligible to serve as an Ordinary Member of Council and any Associate shall be eligible to serve as an Associate Member of Council, and any Licentiate shall be eligible to serve as a Licentiate Member of Council provided, however, that no Member shall be eligible to serve on the Council as a representative of the same class of Membership for more than six consecutive years.

### Eligibility to serve on the Council as Fellow, Associate, Licentiate or Ordinary Member

33. Any Fellow, Associate or Licentiate shall be eligible to serve as a Fellow Member, Associate Member or Licentiate Member

respectively, or as an Ordinary Member of Council, provided, however, that no Member shall be eligible to serve on the Council for more than six consecutive years under Bye-law 28 (1) (e).

#### **Annual retirement from office of Members of Council**

34. On the last day of June in each year the following Members of Council shall retire, that is to say first all those other than the Ordinary Members, the Associate Members and the Licentiate Members referred to in Bye-law 28 (1) (e) and secondly one-third (or if their number be not a multiple of three, then the number nearest to one-third) of the said Ordinary Members, Associate Members and Licentiate Members respectively, for the first three years after the coming into force of these Bye-laws the Ordinary Members, the Associate Members, and the Licentiate Members respectively to retire shall in default of agreement amongst them be decided by lot and thereafter those Members to retire shall be those who have continuously been longest in office as Members of Council of the class which they represent; in cases of equality in the duration of such office of two or more such Members the Member or Members to retire shall be the Member or Members who received the lowest number of votes at his or their election. An Ordinary Member of Council, an Associate Member of Council and a Licentiate Member of Council retiring under the provision of this Bye-law shall be eligible for re-election to the office from which he retires or to any other office of Council for which he is otherwise eligible for re-election PROVIDED that no such retiring Member shall be eligible to serve more than six consecutive years' office as an Ordinary Member of Council, an Associate Member of Council or a Licentiate Member of Council.

#### **Annual Retirement from office of Members of Council**

34. On the last day of June in each year the following Members of Council shall retire, that is to say first all those other than the Members described in Bye-law 28 (1) (e) and secondly three Fellow Members, three Associate Members, one Licentiate Member and three Ordinary Members who have completed a three year term of office since election. A Fellow Member of Council, an Associate Member of Council, a Licentiate Member of Council and an Ordinary Member of Council retiring under the provision of this Bye-law shall be eligible for re-election to the office from which he retires, or to any other office of Council for which he is otherwise eligible for re-election, provided that no such retiring Member shall be eligible to serve for more than six consecutive years as a Fellow, Associate, Licentiate or Ordinary Member of Council, as provided in Bye-law 33. For the first three years after the coming into force of this Bye-law, the procedure for the retirement of Fellow Members previously designated Ordinary Members, Associate Members

and Licentiate Members of Council shall be as follows:—

On the last day of June in each of the three years, six Fellow Members who have served for the longest period continuously in office on the Council, three Associate Members who have similarly served for the longest period in office, and one Licentiate Member who has similarly served for the longest period in office, shall retire. The vacancies on the Council thus created in each of the three years shall be deemed to be vacancies for three Fellow Members of Council, three Associate Members of Council, one Licentiate Member of Council and three Ordinary Members of Council irrespective of their class of membership. In the event of equality in the duration of office of two or more such Members, the Member or Members who received the lowest number of votes at his or their last election shall be the Member or Members who retire. In the event however of casual vacancies occurring through death, voluntary retirement, change of class of membership or other causes, the vacancies so created shall be deemed to be retirements from the class to which they respectively belong pursuant to the transitional provisions of this Bye-law and the number of Members to retire in accordance with the said transitional provisions shall be proportionately reduced. Where, in each of the first three years, such casual vacancies, either alone or with retirements by reason of ineligibility under Bye-law 33, exceed in number the vacancies prescribed by the transitional provisions of this Bye-law then such additional vacancies shall be added to those so prescribed and filled in like manner. These vacancies shall be filled in accordance with the procedure set out in Bye-law 35.

#### **Method of election of Council and duration of office**

35. Prior to the Annual General Meeting the Council shall issue to every member in the United Kingdom and the Republic of Ireland entitled to vote thereon a list of members whom they nominate to fill the vacancies which on the last day of June following there will be on the Council. Such list shall contain the names of at least that number of Fellows as will exceed by two the number of such vacancies among the Ordinary Members of Council and that number of Associates as will exceed by two the number of such vacancies among the Associate Members of Council and that number of Licentiates as will exceed by one the number of such vacancies among the Licentiate Members of Council as nominated for election as Ordinary Members of Council, Associate Members of Council and Licentiate Members of Council respectively.

#### **Method of Election of Council, and duration of office**

35. Prior to the Annual General Meeting, the Council shall issue to every member in the United Kingdom and the Republic of Ireland entitled to vote thereon a list of members whom they nominate to fill the vacancies which on the last day of June

following there will be on the Council. Such list shall be set out in alphabetical order, irrespective of classes of membership, and shall contain at least that number of names which shall exceed by five the total number of vacancies for elected members on the Council. In this list shall be included not less Fellows than there are vacancies for Fellow Members, nor less Associates than there are vacancies for Associate Members nor less Licentiates than there are vacancies for Licentiate Members.

Any seven or more members may nominate any other candidate for any of the offices to which members of the Royal Institute elect under these Bye-laws by delivering such nomination to the Secretary before the close of the Annual General Meeting, accompanied by a written undertaking by the nominee to serve if elected. The name of every candidate so nominated shall be added to the said list, which, with such added names (if any), shall be the voting list for the election.

The names of all candidates for election shall be printed in the same type, and in alphabetical order. The voting list shall contain directions for its use by the members; and any list which fails to comply with such directions shall be rejected by the Scrutineers, and the votes shall be lost.

The Scrutineers, who shall be appointed by the Council, shall have the direction of the election, their decision on any matter relating thereto being final, and five of them shall be a quorum.

The voting list shall be issued to all members in the United Kingdom and the Republic of Ireland entitled to vote thereon as soon as possible after the close of the Annual General Meeting.

A printed list of the attendances of each member of Council during his term of office then current shall be issued to every member in the United Kingdom and the Republic of Ireland as soon as possible after the close of the Annual General Meeting. The list shall record any special circumstances which may have prevented any member from attending meetings of the Council at the request of such member.

The voting list shall be returned to the Secretary at least seven days before the General Meeting in June appointed for the purpose of receiving the report of the Scrutineers, subsequent to the Annual General Meeting. The list shall be folded and enclosed in a sealed envelope bearing on the outside the signature of the member voting. The Scrutineers shall as soon thereafter as may be convenient be summoned by the Secretary to meet at the premises of the Royal Institute and at such meeting he shall deliver to them the said envelopes. They shall then proceed to open the said envelopes and take the voting lists therefrom, without unfolding them, adopting such measures as in their discretion they shall deem fit to prevent the identification of the voters. The Scrutineers shall then open the said voting lists and count the votes, and shall report the result to the General Meeting in June appointed for the purpose.

No change.



The members who receive the most votes shall be declared to be elected at the said General Meeting in June to the respective offices for which they were nominated, and shall enter upon their respective duties from the first day of July following.

In the event of an equality of votes for the President, the Past Presidents or of the number of Ordinary Members of Council, Associate Members of Council or Licentiate Members of Council to be elected, the election of the candidates so receiving such equality shall be determined by ballot of the members present having the right to vote and voting. The Members of Council so elected together with the non-retiring Members of Council shall form the Council which shall remain in office until the last day of June in the year following.

*The Fellows who receive the most votes shall be declared to be elected to those vacancies reserved for Fellow Members, the Associates who receive the most votes shall be declared to be elected to those vacancies reserved for Associate Members, and the Licentiate or Licentiates who receive the most votes shall be declared to be elected to the vacancy or vacancies reserved for Licentiate Members. Thereafter the candidates receiving the most votes and not already having been elected to a vacancy reserved by classes of membership shall be declared elected to those vacancies reserved for Ordinary Members. These Members shall be declared to be elected at the said General Meeting in June and shall enter upon their respective duties from the first day of July following and they shall hold office for a term of three years without the requirement of retirement or re-election, except in the case of an Associate or Licentiate occupying a vacancy designated for an Associate*

*Member or Licentiate Member respectively who shall in the interim have proceeded to the Fellowship. Such Member shall retire on the last day of June following his election as a Fellow.*

*In the event of an equality of votes for the President or the Past Presidents, the election of the candidates so receiving such equality shall be determined by ballot of the members present having the right to vote and voting. In the event of an equality of votes for the number of Fellow Members, Associate Members or Licentiate Members respectively the procedure aforesaid shall be followed, and the Fellow, Associate or Licentiate not so elected shall then rank in the list of candidates for election as Ordinary Members. In the event of an equality of votes for the number of Ordinary Members, the procedure aforesaid shall be followed. The Members of Council so elected together with the non-retiring Members of Council shall form the Council which shall remain in office until the last day of June in the year following.*

The following resolution will be proposed:—

#### Resolution

That subject to the approval thereof by the Lords of Her Majesty's Most Honourable Privy Council the amendments to the Bye-laws as set forth in the notice calling this meeting be made and adopted by the Royal Institute.

If this Resolution is duly carried, a further Special General Meeting will be held on Tuesday 10 January 1956 at 6 p.m., prior to the Ordinary General Meeting on that date, for the purpose of confirming that Resolution in accordance with the provisions of Clause 33 of the Supplemental Charter of 1887.

or a planning approval does not include approval for improvement grant purposes. If work is started before the application for a grant is approved, the applicant will be ineligible for a grant. Where property is already mortgaged advances should not be made otherwise than to the lending authority. The Minister is prepared to agree that advances may be made in these cases if the local authority is satisfied that sufficient security is afforded for an advance on the second mortgage.

In fixing maximum rents for dwellings which are to be improved with the aid of a grant, the rents so fixed can only be on the basis of an unfurnished letting. The fact that the premises are let furnished cannot be taken into account, and a rent for furniture alone cannot be fixed separately from the basic rent.

A house with a continuing subsidy under the Housing Act 1924 should be given an improvement grant only if the owner is prepared to forgo future subsidy. In such cases the local authority should fix a new rent, as they would for any other house for which an improvement is given.

The circular is obtainable at H.M. Stationery Office, price 4d. net.

**Compulsory Purchase.** At the Conservative Local Government Conference at Bournemouth the Minister said that every single compulsory purchase order which is opposed by the owner of the property comes to him personally for decision. Every such order is studied personally by him and signed by him, and before signing he gets the Parliamentary Secretary to give advice upon it. Where he thinks the orders are unfair or unjust he exercises his discretion quite definitely. He said this because it is so widely said that these things are just a formality, and that some official low down rubber stamps these orders.

**Housing Subsidies.** The Minister made a statement in the House of Commons on 27 October regarding housing subsidies in England and Wales and said that a Bill will be introduced to give effect to the proposed changes. The new subsidy rates will apply to any dwellings for which tenders are approved after the date of the introduction of the Bill. The proposed changes are as follows:

1. For future houses, built for general needs, the annual subsidy will be £10 per house, and in a year or so a subsidy will be abolished altogether. Rates of subsidy on houses already built or building will not be altered.
2. Houses built for the purpose of slum clearance will receive the existing subsidy of £22 per house.
3. In respect of houses built by the Corporations of New Towns the subsidy will be increased to £24 per house.
4. The statutory obligation to pay into the Housing Revenue Account a fixed contribution from the rates will be abolished.
5. Housing allocation by the Ministry will be brought to an end and local authorities will be left to determine the size of their own housing programmes.

**MINISTRY OF EDUCATION.** **School Building. Deputation from County Councils Association.** Officials of the Ministry of Education on 26 October received a deputation from the County Councils Association who wished to put to the Minister a number of points about the cost and control of new school building. The deputation was headed by Mr. W. E. Stevens, Vice-Chairman of the C.C.A. Education Committee. The Deputy Secretary represented the Minister.

The deputation asked the Minister to review further the limits of cost per place at the earliest possible date with a view to their being raised at least sufficiently to cover the increases in building costs since 1953. The deputation were reminded that, in accordance with arrangements announced in Circular 264 for varying the limits of cost when the Ministry's index of school building costs showed a movement of 2 per cent or more, the cost limits were raised in April of this year to £264 per place for secondary schools and £154 per place for primary schools. In the Minister's

## Practice Notes

Edited by Charles Woodward[4]

**MINISTRY OF HOUSING AND LOCAL GOVERNMENT.** **Improvement Grants.** Circular 52/55 dated 4 October addressed to housing authorities in England and Wales gives advice in connection with the making of improvement grants.

In cases where there is a mortgage on a house the local authority should take all possible steps to ensure that any applicant for a grant has obtained the approval of the mortgagee or, if possible, the authority itself should notify the mortgagee of the application. This will avoid the possibility of the terms of the mortgage deed being broken. The authority should require from an applicant suitable evidence that a tenant of the house has agreed to the work being done and accepts the rent to be charged when the house has been improved. Unless a tenancy agreement so provides, a landlord has no power to enter on the premises in order to carry out improvements. Approval of proposed work under bye-laws

present view these increases had been adequate. The average nett cost on tender of secondary schools for the months January–September 1955 was £241.9 and the average area per place was 74.0 sq. ft. The average nett cost per place on tender of primary schools over the same period was nearer the cost limits, being £142.3; the average area per place was 42.2 sq. ft. It thus seemed to the Minister that it was possible to design these schools with an adequate specification and area within the current limits of cost. Moreover the Ministry's index of costs had not, up to the middle of October, shown a 2 per cent rise. The deputation were told that, although the Minister would continue to keep the cost of school building under review, he could not, in view of the available evidence and the general need for restriction of capital expenditure, promise an immediate increase in the cost limits.

The deputation next expressed concern that the Ministry's financial restrictions were beginning to cause educational inconvenience and adversely to affect school organisation. In the view of the C.C.A. the limit of proper economy had been passed. The deputation were asked to give instances of what was meant by educational inconvenience and an adverse effect on school organisation, and to indicate where they thought the limit of proper economy had been passed. They instanced the dual use of space, particularly of dining space, and reductions in the amount of circulation areas. It was pointed out to them that the system of cost control was related to the educational building standards of 1952. If those were satisfactory—and they appeared generally to have been accepted as such—present standards were also satisfactory. The periodic adjustments in the cost limits were intended to operate so that authorities could continue to use as much labour and materials on a new school as they did at the end of 1952. The cost limits themselves were also meant to act as incentives to good economic design and consequent high quality. They could not ensure that every authority would have the same standard of building.

While such factors as the nature of the site and variations in regional building costs would affect authorities in different ways the major factor determining the kind of school that was obtained within the cost limit was the skill of the architect. The cost limits were set to make it possible for the architect of average ability to provide a school of a reasonable standard. It was therefore only to be expected that one or two authorities would have new schools which were only just adequate while a few authorities within the same cost limits would be able to build schools of exceptional quality. No school however could be allowed to provide less, either in terms of area or physical conditions or amenity, than was required by the Building Regulations, and in the Minister's opinion the cost limits were adequate for that minimum provision.

The deputation asked the Minister to review the percentage additions to the nett

cost of schools, in respect of roads, paths, boundary fencing, site clearance, etc. They were told that since the items excluded from nett cost were those which could be expected to differ in extent as between one school and another it was not possible to put a firm limit of cost on their provision. The Minister added a percentage of the limit of nett cost to each job when compiling a building programme to ensure that, taking all jobs in a programme together, the total amount of money available for capital expenditure was not exceeded. The percentage figure however was that which was found by experience to be the average. Estimates of the money thought necessary for additional cost items in particular proposals were always examined on their merits, and this year for instance the sums actually allowed for additional costs varied from 4 per cent to 30 per cent of the nett cost. The Minister was glad to remove any misunderstanding which may have arisen on the matter.

The deputation's final request was that the Ministry should re-examine in consultation with the Association the whole problem of securing satisfactory and generally acceptable natural lighting standards in schools. They had in mind that the existing formula should be simplified, or removed from the Regulations and left to the discretion of local education authorities to be exercised in the light of the considerable experience they now possess and of any advice the Minister might wish to issue by means of a Departmental circular. The deputation were informed that the Minister could not give up his responsibility for setting standards. The formula was not complex in itself, but only because of the complex nature of the subject. It was suggested that as a first step towards clarification the Minister should send a letter to the Association explaining the background to the formula and the reasons for its adoption. If the Association then wished to discuss the matter further another meeting could be arranged. The deputation agreed to this course.

**THE ROYAL INSTITUTION OF CHARTERED SURVEYORS.** In the JOURNAL of the Institution for October there is an interesting note on the law as to the repair of highways in England. There is also a note on the nature of the public right to use a highway and the powers of restriction. The numerous powers quoted may account for the congestion in streets.

#### LAW CASES

**J. H. Tucker & Co. v. Board of Trade. War Damage—working drawings.** In this case the Court held that the word 'goods' in sections 84 and 104 of the War Damage Act 1943 does not include working drawings. A substantial claim for their loss had been made. (1955. *All England Law Reports*, Vol. 2, page 522.)

*Note.* A note on the ownership of architectural drawings appeared in the JOURNAL for August 1941 and the position in regard to drawings was explained. The

note was written with reference to the War Damage Act 1941 but the Act of 1943 is in the same terms.

**Morcam (Grey Coat Hospital Governors) v. Campbell Johnson and Others. Improvements or Repairs.** This was an appeal from a decision of the Judge at Westminster County Court and arose under the Rent Restrictions Act 1920. This Act provides that 'expenditure on the improvement of a dwelling-house by the landlord entitles him to increase the rent by an amount not exceeding 8 per cent of the capital sum expended'.

The case concerned a block of flats and the landlords had spent £10,000 in renewing a drainage system, renewing a cold water system and lowering the level of the area surrounding the block of flats. The landlords contended that these works were 'improvements' and sought to increase the rents of the flats accordingly. The tenants contended that the works were 'repairs' and that the landlords could not apportion the cost in respect of work not done to the flats themselves.

The County Court Judge had held that the works were improvements and gave judgment for the landlords. The tenants appealed and the Court of Appeal allowed their appeal.

The Court held that in the case of the drainage system it was the same as had existed before. All that had happened was that instead of having two pipes to take away water and refuse, there was only one pipe. The water system was the same, though instead of having a storage tank in each flat the landlords had substituted a bulk tank at the top of the block. This was simply the replacement of something that existed before by a more suitable modern substitute.

In each case it was a cheaper way of doing the work and came within the category of repairs and not that of improvements. The lowering of the area adjoining the block was a more difficult question. When originally laid it was an inch or two above the damp course and might have caused damp walls. In this case it was difficult to say that the lowering of the area was an improvement to any of the flats and that on the evidence it did not qualify as such. The Court held that if the work done had provided something new for the benefit of the occupiers of the flats it would have been an improvement, but if it was done for the replacement of something already existing, improving it by the replacement of a modern equivalent, that would come within the category of repairs and not improvements.

The tenants' appeal was allowed with costs. (THE ESTATES GAZETTE, 15 October 1955. The case was also reported in THE TIMES, 7 October 1955.)

**Denny v. Budgen. Woodworm in Timbers—Claim Against Surveyor.** In this case the plaintiff employed the defendant to inspect a house she contemplated buying.

The defendant submitted a report saying that the house was in a fair state of struc-

tural repair, he had observed no dry rot in the timbers and joinery he had been able to inspect, but the floor over most of the house was covered by linoleum, thus precluding examination. After the plaintiff bought the house it was found that the floors were extensively affected by woodworm and repairs had to be carried out. The defence was that the inspection was carried out with reasonable skill and diligence and that if woodworm was present it could not have been detected at the time.

The Judge held that there was ample evidence of woodworm visible on a reasonably careful examination. The report said that the floors were covered for the most part by linoleum, thus precluding examination. But that indicated that some examination of the floor was possible and the plaintiff was entitled to believe there had been a careful examination of the visible parts. It turned out that the floors had not been carefully examined. A further statement in the report that the defendant had observed no dry rot in such timbers or joinery he was able to examine was a negligent observation since he should clearly have seen dry rot.

Judgment was given for the plaintiff who was awarded £174 19s. 3d. and costs. (THE ESTATES GAZETTE, 15 October 1955.)

**L.C.C. v. Wilkins. Rating of contractors' huts on site.** In the JOURNAL for May last it was reported that the Court of Appeal had held that contractors' huts on building sites should be assessed for rating.

It is understood that the L.C.C. are appealing to the House of Lords against this decision.

**Murray and Others. v. Hutchinson. Damage by Poplar Tree Roots.** This was an action by the plaintiffs claiming damages for nuisance, negligence and trespass caused by the roots of three black Italian poplar trees in the defendant's garden close to the boundary between the two properties. The defence was that the damage to the plaintiff's house was caused by faulty construction, building on a clay subsoil which had been affected by dry summers in 1947 and 1949, the effect of war-time bombing and the effect of plane trees in the vicinity but not on the defendant's property.

The Judge said that on the evidence it seemed to him that there were several factors leading to the final position; the foundations, settlements common to the area, dry summers, the effect of war damage and the effect of the tree roots. On that finding it was open to him to apportion the damage due to the tree roots, and in his opinion the defendant was responsible for 25 per cent of the damage. (THE ESTATES GAZETTE, 22 October 1955.)

fund to be drawn upon when it cannot be bettered. It is this combination of qualities that makes Italian architecture today the latest phenomenon in Latin history, rather than a mere branch of an Americanised modern movement. The buildings that Pagani shows us in this book are not a flash in the pan; even the casual visitor will find plenty of others. They have their faults—the faults of hasty thinking, excess of cleverness and a desire always to be original—but their merits, oddly enough, are also the solid merits of Mediterranean art. They are unmistakably Italian. It follows that any Englishman with respect for the sources of his own art will welcome Signor Pagani's useful guide.

R. FURNEAUX JORDAN [F]

**World's Contemporary Architecture.** Vol. 2: U.S.A. Yuichi Ino and Shinji Koike. i. 11½ in. (ii) + 94 pp. incl. illus. Tokyo: Shokokusha. 1953. (\$ 5.00.)

One of the earlier volumes of a collection illustrating recent architecture country by country, published in Japan during the past few years. Like its fellows, it is well produced and contains many splendid photographs, but the subjects will be familiar to western readers, and the Japanese text inevitably limits the export value of this excellent series, which reflects credit on publishers and editors.

**Sculpture in Wood,** by P. Edward Norman. (How to do it series, 53.) 9½ in. 95 pp. incl. pls. + pp. of illus. text illus.

**Pen and Ink Drawing,** by [H.] Frank Hoar ('Acanthus'). (How to do it series, 56.) 9½ in. 96 pp. incl. pls. + pp. of illus. text illus. Each, Studio Pubrs. 1954, 1955. 15s.

The amateur artist or craftsman should find these attractively produced volumes good value for money. Both the authors treat their subjects competently.

Mr. Edward Norman stresses the value of a well filled sketchbook and it appears from his remarks on low relief carving (pp. 44-47) that he knows the artistic value of 'limitations'. He does not, however, discourage the reader from expressing himself, and gives instructions for a first attempt and a recipe for an 'abstract', but in his chapter on inspiration he makes no mention of artefacts such as the half-models used by ship designers.

What Mr. Norman has to say on polishing may be read with profit by those who have to do with ordering joiner's work, e.g. carved newels, likely to come into contact with the hands.

Many examples of wood carvings of all periods are given, together with information on where to find them. (For a badly designed 'base', see the museum piece on p. 64!)

'Acanthus' (Mr. Frank Hoar) divides his subject into architectural and other pen and ink drawings, advancing no aesthetic theories save where he distinguishes between architectural drawings done from a 'subjective' and an 'objective' standpoint respectively.

He quotes Ruskin extensively without

## Book Reviews

**Architettura Italiana Oggi: Italy's Architecture To-day.** by Carlo Pagani. 11 in. 293 pp. Text illus. Milan: Hoepli 1955. £3 3s. 0d.

Italy is still, architecturally speaking, the most interesting country in Europe. It is still producing buildings—admittedly bad and indifferent as well as good—and producing them in great numbers. Italian understanding of the technique of reinforced concrete is combined with a traditional love for form and colour, as well as with those traditional crafts—marble, plaster, mosaic—that are Italy's gift from the Good Fairy. Milan is building today as few cities have built in history—the skyline changes month by month—and Rome is only a little behind. In such lush and expensive Roman suburbs as Parioli, indeed, Rome is probably ahead of the more democratic Milan, both in quality and finish. Just because Italy is building so fast and, on the whole, so well, the English architect badly needs some guidance on his brief holiday visits.

Signor Pagani's book (admirably produced by Hoepli) should therefore be invaluable. One's only regret is that its format almost bans it from the suitcase. It includes some 500 photographs of about 100 buildings, together with plans and technical notes. All types of building are included. There is a foreword by Neutra, and the text is in Italian and English.

Not all the work is of the same standard but there is no doubt that in Italy today there is a genuine passion for architecture for architecture's sake. Such buildings as these—many experimental, few of them orthodox—can only come into being if that passion is shared by both client and architect; if architecture, in fact, is part and parcel of life itself. Many of the architects whose work is shown are clearly men of ability and sensitivity. Their sensitivity may, in some cases, be a reaction against the more aggressively rhetorical work of the Fascist era; their ability is part of the age-long Latin tradition. Moreover, neither sensitivity nor ability is negative—in colour, form, structural clarity and modelling much of the work is very positive in its merits; more positive than recent Swedish work, less cliché-ridden than that of the U.S.A., less dramatic than that of Brazil, less intellectual than that of France, less inhibited than our own.

Signor Pagani has made a wide, fair and representative choice of subject matter. He has prefaced his book with a useful historic survey showing that, despite the faults of the Fascist era, the modern movement was already finding itself in the 'thirties in such work as the Fascist H.Q. at Como or in the railway station at Florence. The present phase however really begins with post-war reconstruction, with the 1951 Triennale and the Fanfari Plan of *Ina-Casa*. All this work however, while full of variety, is consistent in combining an intense sophistication with a certain respect for tradition—not tradition for its own sake but as a



seeming to realise that Ruskin was engaged on much the same task of instruction by precept and reference that this Studio series is attempting. Ruskin's remarks on technique were aimed at a purse-proud public who preferred the meticulous but artistically negligible work of their day to the rugged shorthand of the great Italian masters. Many drawings of these masters are given together with modern work; much of the former can of course be seen among the British Museum prints.

Acanthus is in error in ascribing the general use of sepia to earlier than the nineteenth century, or its occasional use to earlier than the eighteenth century. It is perhaps relevant to mention that he omits from his general illustrations all the French nineteenth century draughtsmen but Dauterive, and from his architectural illustrations any work of the nineteenth century in England.

C. J. SEARLE [A]

**A History of Fortification from 3000 B.C. to A.D. 1700**, by *Sidney Toy*. 8½ in. xxiv + 262 pp. + pls. text illus. Heinemann. 1955. £1 10s.

A comparison of this work with the author's *Castles of Great Britain* (1953, 2nd ed. 1954) shows that the antithesis is not one of subject—a 'castle', after all, is a fortified house or an inhabited fortification—but of geographical range: the world against one country. This means inevitably a certain overlap, since our own country made its special contribution; but the ancient civilisations furnish their impressive prelude, and the period division is naturally different. As in the other book, first-hand observation on travels extending through several decades, amplified by immense research, makes the work a thorough study in this field. Fortified towns, bridges, and churches are usefully included.

The illustrations, as before, are representative of the examples and include site plans, scale-drawings and air-photographs; there are comparative diagrams of arrow-loops, gunloops, windows, shutters, and spurs (the tapering triangular projections rising from the ground). At least one plan is conjectural—viz. that of Jerusalem, showing a highly debatable course of the Second Wall. There is a fair index, though it does not cover illustrations.

H. V. M. R.

**A Treasury of Contemporary Houses**, by the editors of the *ARCHITECTURAL RECORD*. 11½ in. vii + 215 pp. incl. pp. of illus. text illus. New York: Dodge Corp. [1954.] (\$5.95.)

Fifty new houses in the United States, selected from recent issues of *ARCHITECTURAL RECORD*, are illustrated in this handsome book with floor (and sometimes site) plans and over four hundred photographs. A certain amount of simple, descriptive text is also provided.

It is safer, of course, to bury one's head in the sand and make no comparisons with houses lately built elsewhere, but even a very insular ostrich can feel envious.

**Specifications in Detail**, by *Frank W. Macey*. 5th ed. By *Donald Brooke* and *Stanley Wilkinson*. 9½ in. viii + 712 pp. text illus. Technical Press. 1955. £3 10s.

This is the fifth edition (1955) and has been revised and enlarged by D. Brooke and Stanley Wilkinson in the light of the research work that has been carried out since the fourth edition was published in 1930. A feature of the new edition is the inclusion of 'Useful Information', given at the beginning of each section dealing with the various trades; for example, at the head of 'Bricklayer' there are notes on the standard sizes of bricks, the superficial coverage of one rod according to the wall thickness, weight of brickwork and of various mortar mixes, and so on. This saves searching in other books. Another addition is the frequent reference to British Standards. At the end of each trade section a list of useful reference books is given.

The specification items are numbered separately for each trade and are inset on the page with marginal headings, followed by explanatory remarks printed the full width of the page and thus easily distinguished from the formal specification items. There are many detail sketches. Occasionally alternative methods or sizes are given in parenthesis without comment as to the better practice, and this may slightly trouble the young architect.

The first edition was published in 1899 and a faint aroma of the workmanship of those days lingers in the new edition in such clauses as 'All skirtings to be rebated to floors', although it is explained that this is done only in first-class work. Again, referring to sash windows, 'The pulley styles and beads are sometimes in oak, walnut or mahogany when the sashes are in a similar wood; the bead is then fixed with brass socket screws'. Would that all inside beads were so fixed.

But the book is more than one on the writing of specifications; with the sketches and explanatory notes it becomes a condensed textbook on building construction and as such it should be of value to architects and especially to young architects and students.

F. W.

**Elementary Quantity Surveying**, by *Sidney Ralphs*. 7½ in. vii + 383 pp. incl. facsimile tables + ii folding pls. text. illus. Pitman. 1955. £1 5s.

This book is intended for the first year of the Quantity Surveying course and the third and fourth years of the Building Construction course for technical college students. It is illustrated with facsimile hand-written (not printed) examples of calculations, abstracts and so on, ending with the typed bill of quantities itself. All these, and a rather formidable list of abbreviations, reinforce the author's insistence on tidiness, method and exact descriptions.

**Technical Publications**, by *C. Baker*. 8½ in. xiii + 302 pp. + 2 folded pls. text illus. Chapman and Hall. 1955. £1 16s.

The author says this book is designed for any amateur who finds himself obliged to write any kind of technical information for industry, with the engineering profession particularly in mind. (Mr. Baker is an Associate of the Royal Aeronautical Society.) Probably the engineering profession does comprise a wider range of technical writers of one kind or another than, for instance, the architectural profession. Even so, Mr. Baker ranges from the writing of simple directives to operatives and notices to put on the works notice board to highly technical problems of printing and reproduction. It is not surprising, with this huge field to cover, that he is sometimes too elementary and sometimes too technical; now too sketchy and now too detailed.

Thus, in a chapter entitled 'The Use of Words' he touches briefly on some of the more obvious faults of English grammar. He has some common-sense things to say about the use of the hyphen and lays bare that trap for the unwary, the unattached participle. (It is a pity that he does not deal also with those two current faults, the use of 'disinterested' when 'uninterested' is meant and the attempt to use the purely adjectival 'due to' when the adverbial 'owing to' is required.) He gives useful examples of the pruning of verbosity and takes the reader in a business-like way through the writing of a clear report in the manner of a school teacher training a class in essay-writing. On the other hand, his explanation of the split infinitive is far from clear, his remarks on commas are obvious and omit much, and in at least one instance (p. 102) his grammar is quite at fault if he really thinks the sentence quoted could be given the interpretation he professes to believe it could.

Proceeding to the field of printing technicalities, Mr. Baker gives an extremely useful list of the London Mathematical Society's agreed symbols, and his graph showing the comparative costs of printing by letterpress, photogravure, lithography and silk screen is worthy of a place of honour over the desk of any technical editor or publisher. On the other hand, when dealing with the ordering of blocks for the letterpress process he gives the rather startling advice that instructions should be written on the face of originals. He is hazy about the difference between electros and stereotypes, giving the impression that it consists merely in their being made of different metals; whereas the processes are quite different, are used for duplicating different kinds of blocks, and result in quite different prices! Mr. Baker is hazy too about the difference between deeply etched blocks and deep-etching. Nor does he make any mention of the important point that several blocks can be made at one time and so for the price of one if they are to have the same reduction. And his habit of using the words 'tint' and 'screen' interchangeably is confusing and unorthodox.

The technical editor will give thanks for the warning to authors against apparently trivial but actually costly alterations to proofs, and the stenographer for his advice

on clear and slow dictation. In fact there is something in this book for nearly everyone, but a certain amount of knowledge is necessary to extract what is useful. The tyro could be seriously misled. K. B.

**Surveying.** Solutions to B.Sc.(Eng.) Examination Questions, London University, External, by D. H. McPherson and P. N. Ray. 8½ in. 152 pp. incl. vii pp. text diag. Macdonald. 1955. 18s.

A book of solutions to B.Sc. questions on surveying, intended for use as illustrative examples, especially for home students.

**Simplified Site Engineering for Architects and Builders,** by Harry Parker and J. W. MacGuire. 7½ in. xiv + 250 pp. text illus. New York: John Wiley; London: Chapman & Hall. [1954.] £2.

Assuming nothing, the authors begin with a really elementary explanation of logarithms and trigonometry, for those who have forgotten about such things. Their account of computations for surveying, drainage, setting out building works and so on is just as explicit; they conclude with reminders of things to remember when choosing a site or making a site plan, and log tables. A practical reference book for the American architect and student and, allowing for slight differences in terminology, useful enough to the British.

**Old Buildings—Problem and Challenge,** by John [H.] Harvey. (From Trans., Ancient Monuments Socy., N.S. ii, 1954.) 9 in. (9) pp. n.p. Batsford. 1955. 1s.

This short study deals with the familiar problem of legal preservation in terms of the urgent current situation. The author laments that 'buildings are condemned, or their condemnations condoned, by the very bodies legally responsible for preservation, and in the teeth of keen and informed local opposition' and that some 'of those recently given "protection" by statutory listing are removed from the lists as soon as there is a conflict with other interests'; he grimly concludes that 'the country faces . . . the loss of the most tangible part of its traditional heritage.' It may be recalled that a resolution to remedy this situation was moved by W. W. Begley [L] and passed at a recent meeting of the Council for British Archaeology. The author then discusses the questions of the value of beauty, causes of decay, unwisdom of using synthetic stone for repair, and facilities for the training of 'architect-conservators' and craftsmen.

H. V. M. R.

**Möbel und Raum,** by Ruth H. Geyer-Raack and Sibylle Geyer. 10½ in. 96 pp. incl. pls. and pp. of illus. + (2) col'd. pls. Berlin: Bauwelt. 1955. DM West 4.90.

'After the experience of the last war', we are told, 'our belief in the permanence of earthly possessions has been rudely shaken. We want to be mobile and live unencumbered', and this change in living habits has caused a world-wide revolution in the

design of furniture and household equipment.

With this conviction firmly in mind, authors and publishers set themselves the task of providing a representative cross-section of the best post-war work in furniture and interior design both in Germany and abroad, for the benefit not only of the technical man and the student but also of the lay public. Their choice proves to be wide, balanced and judicious. It makes an attractive and instructive picture book.

## Correspondence

To the Editor.

### DICTIONARY OF ENGLISH ARCHITECTS

SIR,—I am most grateful to Mr. Cordingley for questioning my facts concerning George Nicholson in my review of Colvin's *Dictionary of English Architects*.

Whilst I have little incontrovertible evidence, the following does, I think, substantiate my original assertion that George Nicholson was more mason than architect, despite the sources quoted by Mr. Cordingley.

I suggest that these latter at the best had a tendency—as all regional historians of that age of flattery did—to inflate the importance and achievements of the local worthies to the exclusion often of those to whom credit was rightly due. In this case I submit that it was Robert Mylne and not Nicholson who was the official architect to the Dean and Chapter of Durham from 1772 until about 1795 and so long as the archives of the chapter remain inaccessible to researchers this must remain controversial. To back my assertion however I have evidence from Mylne's business journals.

Mylne first visited Durham on 4 March 1772 when he 'inspected the fallen bridge and the site of the new one'—this being Prebend's Bridge—while a fortnight later he 'gave advice on the situation and form of the bridge'. That same year he designed the bridge at Newcastle in conjunction with John Wooler, the cost being shared between the County Palatinate and the Town Council—hence the two architects. Mylne designed and built three further bridges over the Tyne during the next two decades and was, consequently, passing through Durham quite often.

Mr. Cordingley may be interested to read my article 'Mylne and Tyne Bridges' in *ARCHAEOLOGIA AELIANA* 1955 due out shortly.

Besides this work, Mylne carried out repairs to Durham Castle in 1772, and to Durham Cathedral in 1775 and alterations to Auckland Castle in 1776. But I think the most interesting evidence of Mylne's relationship to Nicholson lies in a letter from the Bishop of Durham to Archdeacon

**The Heating of Churches.** A full technical review . . . by a committee of architects and heating engineers. *Central Council for the Care of Churches*. 11½ in. 16 pp. text illus. THE BUILDER. 1955. 2s. 6d.

Reprinted from issues of THE BUILDER, this pamphlet presumably supersedes the Council's *Lighting and heating. Interim notes leaflet* (1945) and will be of great use, though meanwhile the Incorporated Church Building Society's *Heating of churches* (1947) has appeared. It is well illustrated.

Henry Egerton dated 19 May 1783 referring to Newcastle Bridge (Herts. County Archives): 'The enclosed letter from Mr. Mylne to Brooks I send to beg you to take the farther trouble to talk with Nicholson, as I wish to know whether he will look at the work which Mylne advises to be done and will undertake to do it at a fixed price or if he will not whether he can recommend any mason capable of doing it. I shall not chuse (*sic*) to let anyone set about it till agreement has been made specifying the work to be done and the sum to be paid.'

Yours faithfully,

CHRISTOPHER GOTCH [4]

### HENRY MARTINEAU FLETCHER MEMORIAL TRUST FUND

SIR,—The announcement that a group of friends and the members of his family had set up a Trust Fund as a Memorial to the late Henry Martineau Fletcher was first announced in your issue of July last. We feel sure that your readers will be interested to learn that donations so far received amount to well over £1,000. The greater part of this sum has been contributed by members of Henry Fletcher's family, a most generous gesture of remembrance.

It may be that the previous notice of this Memorial Fund, coming as it did in the midst of the summer holiday season, was overlooked by many of those members who knew Henry Fletcher and who would wish to add their tributes to his memory by a contribution to the Fund. If this should be the case, may we remind your readers that the interest on the Fund is to be allocated for the purchase of books for the R.I.B.A. library and that these books will bear a specially designed bookplate—a practical tribute to one who did so much for the R.I.B.A., for architectural education and for the library.

Any contributions would be welcome before the list is finally closed and these may be sent to S. Rowland Pierce, c/o The Librarian, R.I.B.A., 66 Portland Place, W.1. Cheques should be crossed 'H. M. Fletcher Memorial Fund'.

Yours faithfully,

GRAHAME B. TUBBS,

S. ROWLAND PIERCE,

Joint Trustees, on behalf  
of the Library Committee

# Notes and Notices

## NOTICES

**Second General Meeting, Tuesday 6 December 1955, at 6 p.m.** The Second General Meeting of the Session 1955-56 will be held on Tuesday 6 December 1955, at 6 p.m., for the following purposes:

To read the Minutes of the Inaugural General Meeting held on 1 November 1955; formally to admit new members attending for the first time since their election.

Mr. H. S. Goodhart-Rendel, C.B.E., Mus.B., M.A., Past President R.I.B.A., to read a paper on 'Brompton, London's Art Quarter'.

(Light refreshments will be provided before the meeting.)

**Special General Meeting, Tuesday 20 December 1955, at 6 p.m.** Notice is hereby given that a Special General Meeting of the Royal Institute of British Architects, open only to corporate members, will be held on Tuesday 20 December 1955 for the purpose of considering the Council's recommendations for the revision of the Bye-laws, resulting from the report of the Committee on the Constitution of the Council which was published in the JOURNAL for May 1955. The relevant Bye-laws as they exist at present and the proposed amendments (in *italics*) are given on pp. 28-30 of this JOURNAL.

The following resolution will be proposed:

'That subject to the approval thereof by the Lords of Her Majesty's Most Honourable Privy Council the amendments to the Bye-laws as set forth in the notice calling this meeting be made and adopted by the Royal Institute.'

If this Resolution is duly carried, a further Special General Meeting will be held on Tuesday 10 January 1956, at 6 p.m., prior to the Ordinary General Meeting on that date, for the purpose of confirming that Resolution in accordance with the provisions of Clause 33 of the Supplemental Charter of 1887.

**Session 1955-56. Minutes I.** At the Inaugural General Meeting of the Session 1955-56 held on Tuesday 1 November 1955, at 6 p.m.

Mr. C. H. Aslin, C.B.E., President, in the Chair.

The meeting was attended by about 180 Members and guests.

The Minutes of the Ninth General Meeting of the Session 1954-55 held on Tuesday 14 June 1955 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The President delivered his Inaugural Address of the Session.

On the motion of The Hon. David Bowes-Lyon, seconded by Sir William Acland, Bt., a vote of thanks was passed to the President by acclamation and was briefly responded to.

The President presented the R.I.B.A. London Architecture Bronze Medal and Diploma for 1954 to Dr. J. Leslie Martin, M.A. [F], Architect to the London County Council, for the L.C.C. Ackroydon Estate, Wandsworth, S.W.19.

Dr. Martin thanked the President and Council for the honour conferred upon him.

The President also presented the replica of the Bronze Medal to Mr. W. G. Fiske, Chairman of the L.C.C. Housing Committee, representing the building owners, and he and Mr. W. L. Marchant, representing the Contractors for the building, also spoke.

The President then presented Diplomas in connection with the R.I.B.A. Award for

Distinction in Town Planning to Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.M.T.P.I. [F], and Mr. Frederick Gibberd, C.B.E., M.T.P.I. [F].

The proceedings closed at 7.10 p.m.

**British Architects' Conference 1956.** The British Architects' Conference 1956 will be held at Norwich from 30 May to 2 June at the invitation of the Norfolk and Norwich Association of Architects. Full details of the programme will be published in due course. A list of hotels in Norwich will be published in the December issue of the JOURNAL.

**Kalendar 1955-56. Corrections.** On p. 260 the entry 'A. Hinchliffe: Terence' should read 'A. Hinchliffe: Terence, Dip.Arch.(Leics.).'

On p. 262 the address of Mr. James Ronald Hobson, Dipl.Arch.(Leeds), is incorrect and should read as follows: 38 Pulcroft Road, Hesse, East Yorks.

On p. 332 the address of Mr. Alan John McCombe, B.A.(Arch.) (Lond.) [A], is incomplete and should read: Architect's Department, Stevenage Development Corporation, Aston House, near Stevenage, Herts.

**Applications for the Fellowship.** As announced in the R.I.B.A. JOURNAL for May 1955, p. 280, a new procedure for considering applications for election to the Fellowship will come into force on 1 January 1956. From that date all candidates without exception will be required to submit to the Fellowship Examiners drawings and photographs or examples of work. They may also be required to attend for an interview, which may however be dispensed with at the discretion of the Fellowship Examiners.

Hitherto, Associates who have been principals in private practice for not less than seven successive years, and certain other Associates regarded as being in a position of equivalent responsibility, have been able to proceed to the Fellowship without the submission of drawings or examples of work. This concession terminates on 31 December 1955.

After that date the Fellowship Examiners will meet monthly to consider applications for the Fellowship. Any Associates applying will be required to submit to the Examiners for the approval of the Council working drawings and photographs of one or more of their executed buildings, which may be supplemented by original sketches or measured drawings of actual work. Applicants are requested to indicate on their drawings the date upon which they were prepared. The provisions at present in force for Licentiate applying for election to the Fellowship are not affected.

**Licentiate and the Fellowship.** By a resolution of the Council passed on 4 April 1938 all candidates whose work is approved are required to sit for the Examination, which is the design portion of the Special Final Examination, and no candidates will be exempted from the Examination.

*Note.*—The above resolution does not affect Licentiate of over 60 years of age applying under Section IV, Clause 4 (c) (ii) of the Supplemental Charter of 1925.

**Architectural Competitions—Assessors' Awards.** All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and

that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Further, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional press which tends to criticism or disparagement of an assessor or award cannot alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is therefore highly undesirable.

**The Acceptance of Pupils and Junior Assistants and the Probationership of the R.I.B.A.** The Board of Architectural Education have noticed that the practice still persists of members accepting pupils or junior assistants without satisfying themselves that such pupils or junior assistants have reached the necessary standard of general education for the Probationership. Members are reminded that it is most important that they should not take boys or girls into their offices unless they possess one of the qualifications laid down.

A list of the recognised examinations can be obtained on application to the Secretary, R.I.B.A.

**R.I.B.A. London Architecture Bronze Medal 1955.** The attention of members is called to the form of nomination and conditions of the award, enclosed with this issue of the JOURNAL. The award will be made for a building built within the counties of London and Middlesex during the three years ending 31 December 1955. Any member of the Royal Institute may nominate any building for consideration by the Jury.

Nomination forms must be returned to the Secretary, R.I.B.A., not later than 29 February 1956.

**Cessation of Membership.** Under the provisions of Bye-law 21, the following have ceased to be members of the Royal Institute: *as Fellows:* George Edward Bright, Kenneth Patrick James Courtney-Dyer, Ernest Ogden, Thomas Sidney Vickery. *As Associates:* Margaret Joan Burke, Anne Elizabeth Soley Charlesworth, Ethna Devaney, Joseph Haydn Lumb, Gilbert Leslie Monk. *As Licentiate:* Thomas Gardner, Arthur Haynes Johnson, John Edward Kelly, John Edward Lenton, Seth Stephens, John Patrick Tupper, Ernest George Wilks, Frederick Ernest Williams.

## COMPETITIONS

**Dwellings for Old People, East Horsley, Surrey.** The Architects' Benevolent Society Homes Trust invite architects in Great Britain, Northern Ireland or the Republic of Ireland to submit in competition designs for 20 new dwellings for Old People and Warden's accommodation at East Horsley, Surrey.

Assessors: H. S. Goodhart-Rendel, C.B.E. [F], Arthur W. Kenyon, C.B.E., M.T.P.I. [F], G. Grenfell Baines, A.M.T.P.I. [A].

Premiums: £100, £75.

Last day for submitting designs: 6 April 1956. No questions will be answered.

Conditions may be obtained on application to: The Secretary, Architects' Benevolent Society, 66 Portland Place, London, W.1.

Deposit: £1 1s. 0d.

**New Offices, Enniskillen.** The Fermanagh County Council invite British architects to submit designs for new offices to be erected in



Enniskillen, Northern Ireland, on a site adjoining the Courthouse.

Assessor: Mr. R. S. Wilshire, M.C., F.R.I.C.S. [F].

Premiums: £500, £200.

Last day for submitting designs: 4 p.m. 20 December 1955.

Conditions may be obtained on application to the Secretary, Fermanagh County Council, Enniskillen, Co. Fermanagh.

Deposit: £2 2s. 0d.

**International Competition for a Monument in honour of Generalissimo Dr. Rafael Leonidas Trujillo Molina.** Notice has been received from the Secretary General of the International Union of Architects of an architectural competition being promoted in the Republic of Dominica for the design of a monument commemorating Dr. Rafael Leonidas Trujillo Molina.

The conditions for this competition are at present not such as to conform to the Regulations for International Competitions in Architecture and Town Planning approved by the International Union, and members and Students R.I.B.A. are accordingly warned not to take part in this competition.

If, as a result of further negotiation, the conditions are amended to satisfy the requirements of the International Union, a further notice will be published.

## BOARD OF ARCHITECTURAL EDUCATION

**Examination for the Office of Building Surveyor under Local Authorities.** At the R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities held on 12, 13 and 14 October 1955 six candidates presented themselves and the following were successful: William Finlay Kerr, Joseph M. B. Baffoe-Bonnie, Percival Leslie Teale.

## ALLIED SOCIETIES

### Changes of Officers and Addresses

**Nottingham, Derby and Lincoln Society of Architects, Nottinghamshire Branch.** Chairman and Hon. Secretary, J. Gordon Woollett, D.F.C. [A].

**Orange Free State Provincial Institute of Architects.** Hon. Secretary, R. Roberts, 413 U.B.S. Building, Maitland Street, Bloemfontein, O.F.S., South Africa.

**The Essex, Cambridge and Hertfordshire Society of Architects: Hertfordshire Chapter.** This year's Certificate of Craftsmanship, which is annually awarded by the Hertfordshire Chapter of the Essex, Cambridge and Hertfordshire Society of Architects, was presented to Messrs. John Laing and Son Ltd. at a dinner held at Welwyn Garden City on 11 November. The award was in connection with the Murphy Radio new factory at Welwyn Garden City, for which the architect was Mr. C. W. Hutton [F].

**Federation of Malaya Society of Architects.** In the July issue of the JOURNAL (p. 352) we published an illustration of the Presidential Jewel of the Federation of Malaya Society of Architects, together with a description of it and the statement that the jewel was worn for the first time at the Society's annual dinner in March by the President, Mr. V. S. van Langenberg. The Society now inform us that we were misinformed on this point, and that the jewel

was in fact worn for the first time by the former President, Mr. A. O. Colman [L] at the annual dinner in 1954.

## GENERAL NOTES

**The University of Liverpool. The Chair of Building Science.** The Council of the University of Liverpool is inviting applications for the newly established Chair of Building Science. The salary proposed is not less than £2,100 per annum. Further particulars, including a more precise indication of what is envisaged as the scope of the Chair, may be obtained from the Registrar, the University of Liverpool, by whom fourteen copies of applications (one in the case of overseas candidates) should be received not later than 10 December.

**Leverhulme Research Awards, Fellowships and Grants.** Application is invited for Fellowships and Grants in aid of research. These awards are intended for senior workers of established position and are limited to British-born subjects normally resident in the United Kingdom; in exceptional circumstances the Trustees may waive the condition as to residence. No subject of enquiry is excluded from consideration but preference is given to subjects in which existing provision for research is inadequate. The duration of the awards does not extend over more than two years or less than three months and the amount depends on the nature of the research and the circumstances of the applicant.

Forms of application may be obtained from the Secretary, Miss M. Branney, Leverhulme Research Awards (F), St. Bridget's House, Bridewell Place, London, E.C.4. Telephone: City 1910. Applications must be received on or before 31 December 1955. Results will be announced in May and the awards will normally date from 1 September 1956.

**George VI Memorial Fellowship.** Among the candidates recently presented for the degree of Master of Architecture at the Carnegie Institute of Technology, Pittsburg, was Mr. P. E. Williams [A], who had completed a year's postgraduate study of industrial architecture. Mr. Williams is a former student of Brixton School of Building, where he completed the full-time course in architecture in 1954.

**The Gold Coast Society of Architects.** One of the functions of the Gold Coast Society of Architects is to provide information on local conditions to architects who are proposing to take up appointments in the Gold Coast. Requests for information should be made to the Hon. Secretary of the Gold Coast Society of Architects, Mr. Arthur Lindsay [A], P.O. Box 1343, Accra, Gold Coast.

**Ecclesiastical Architects' and Surveyors' Association. Annual Meeting.** The annual meeting of the Ecclesiastical Architects' and Surveyors' Association was held at the R.I.B.A. on 25 October. Mr. Paul J. J. Panter [F] was elected President, Mr. V. G. Cogswell [F] Vice-President and Mr. P. Ferrey, A.R.I.C.S., was re-elected Hon. Secretary and Treasurer.

The Secretary reported on correspondence which he had had with the Central Council for the Care of Churches regarding invitations to membership under the new rules and a discussion followed about matters of general interest to ecclesiastical architects and surveyors. It was decided that the Annual Country Meeting should be held at Cambridge on 11 May 1956.

After lunch, a number of members were conducted on a tour of the repair work at Westminster Abbey, by permission of the Dean.

**Lethaby Lectures.** Professor Basil Ward, Hon. A.R.C.A. [F], Lethaby Professor of Architecture at the Royal College of Art, will give the fifth of his series of lectures on 'W. R. Lethaby and his Times' on Monday 28 November 1955, at 5 p.m., in the lecture theatre of the Victoria and Albert Museum.

## Membership Lists

### ELECTION: 6 MARCH 1956

An election of candidates for membership will take place on 6 March 1956. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Wednesday 15 February 1956.

### AS FELLOWS (2)

**Brookfield: George Piers, B.Sc.(Dalhousie), S.B.(Mass. Inst. Tech.), B.Litt.(Oxon) [A 1926], 10 West 33rd Street, New York, 1, N.Y., U.S.A.; 724 Burns Street, Forest Hills Gardens, N.Y. Sir Alfred Bossom, Christopher Green, W. A. S. Lloyd.**

**Reay: Donald Patterson, M.Sc.(Columbia), B.Arch.(L'pool), A.M.T.P.I. [A 1937], 1834, Euclid, Berkeley, California, U.S.A.; 2565 Buena Vista, Berkeley, California. D. L. Bridgwater, Prof. Sir William Holford, Sir Hugh Casson.**

### AS ASSOCIATES (14)

**Berk: Frank Victor (Special Final), 37/38 Beverley House, Baker Avenue, Salisbury, Southern Rhodesia. F. H. Herrmann, C. W. Box, Richard Nickson.**

**FitzGerald: (Mrs.) Elizabeth Alyssum, (Arch. Assoc. (London): Sch. of Arch.), c/o National Bank of India, Nairobi, Kenya. E. M. Fry, Arthur Korn, R. F. Jordan.**

**Frank: Jeffrey Eldred, Dip.Arch.(C.T.) (Passed a qualifying Exam. approved by the I.S.A.A.), 406 Martian House, Strand Street, Port Elizabeth, S. Africa. Prof. L. W. T. White and applying for nomination by the Council under Bye-law 3(d).**

**Hain: Walter Vannet, B.Arch.(Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Ivan B. Sive, Esq., 29/30 Chriella Court, 273 Pretorius Street, Pretoria, S. Africa. John Innes, V. S. Rees-Poole, Prof. A. L. Meiring.**

**Hargraves: Cecil Francis, Dip.Arch.(Queensland) (Passed a qualifying Exam. approved by the R.A.I.A.), 89 Hansen Street, Moorooka, S.4, Brisbane, Queensland, Australia. E. J. A. Weller, R. P. Cummings, C. Fulton.**

**Kerr: Eric Alan David, B.Arch.(Melbourne) (Passed a qualifying Exam. approved by the R.A.I.A.), 31 Wolseley Grove, Brighton, S.5, Victoria, Australia. Prof. B. B. Lewis, Mrs. Hilary Lewis, R. G. Parker.**

**Lloyd: Eric Richard (Special Final), Architects Department, P.W.D., P.O. Box 662, Nairobi, Kenya. W. Alp, G. B. E. Norburn, H. T. Dyer.**

**Mooney: Keith William, Dip.Arch.(Queensland) (Passed a qualifying Exam. approved by the R.A.I.A.), 2 Hall Street, Gympie, Queensland, Australia. E. J. A. Weller, R. P. Cummings, C. Fulton.**

**Muggeridge: Brian Stewart**, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), c/o Messrs. Fleming & Cooke, Balfour House, Commissioner Street, Johannesburg, S. Africa. Applying for nomination by the Council under Bye-law 3(d).

**Mullan: Anthony James** (Passed a qualifying Exam. approved by the N.Z.I.A.), Shorts Buildings, 154 Queen Street, Auckland, C.I., New Zealand. Prof. C. R. Knight, Prof. A. C. Light and the President and Hon. Secretary of the N.Z.I.A. under Bye-law 3(a).

**Rigby: Alan McKenzie** (Passed a qualifying Exam. approved by the N.Z.I.A.), Shorts Buildings, 154 Queen Street, Auckland, C.I., New Zealand. Prof. C. R. Knight, Prof. A. C. Light and the President and Hon. Secretary of the N.Z.I.A. under Bye-law 3(a).

**Ritchie: John Donald**, B.Arch.(C.T.) (Passed a qualifying Exam. approved by the I.S.A.A.), 17 New Africa House, Union Avenue, Salisbury, Southern Rhodesia. Prof. L. W. T. White and applying for nomination by the Council under Bye-law 3(d).

**Thornton: Geoffrey Garth** (Passed a qualifying Exam. approved by the N.Z.I.A.), 76 Ladies' Mile, Remuera, Auckland, S.E.2, New Zealand. Prof. C. R. Knight, Prof. A. C. Light and the President and Hon. Secretary of the N.Z.I.A. under Bye-law 3(a).

**Weller: Michael Gibson**, B.Arch.(Melbourne) (Passed a qualifying Exam. approved by the R.A.I.A.), 18 Rushall Crescent, North Fitzroy, Melbourne, Victoria, Australia. H. S. Winbush, Prof. B. B. Lewis, R. G. Parker.

## ELECTION: 1 NOVEMBER 1955

The following candidates for membership were elected on 1 November 1955.

### AS FELLOWS (2)

**Fraser: James Milner**, C.B.E., M.T.P.I. [A 1929], Singapore.

**Patki: Janardan Ganesh** [A 1938], Bombay, India.

### AS ASSOCIATES (14)

**Ang: Kheng Leng**, B.Arch.(Manitoba), Singapore.

**Barnett: Jack**, B.Arch.(C.T.), Cape Town, S. Africa.

**Barve: Vasant Purushottam**, Rangoon, Burma.

**Blomfield: Leslie Arthur Albert**, Lusaka, Northern Rhodesia.

**Dansey: John Huai Barter**, Dip.Arch.(Auck., N.Z.), Auckland, New Zealand.

**Darling: Patrick Munro Coalbank**, Luleå, Sweden.

**Diserens: Marcel Alexis**, Lusaka, Northern Rhodesia.

**Elliott: Julian Arnold**, B.Arch.(C.T.), East London, S. Africa.

**Garrett: Robert Michael**, A.A.Dipl., Vancouver, B.C., Canada.

**Garson: Henrik Ulsten**, B.Arch.(C.T.), Kitwe, Northern Rhodesia.

**Gosschalk: Bernard Louis**, B.Arch.(C.T.), Cape Town, S. Africa.

**Hall: Edmund**, Dip.Arch.(Manchester), Senlager, B.A.O.R.

**Tulitt: Francis Edginton**, Natal, S. Africa.

**Webber: (Mrs.) Jill Elizabeth**, B.Arch.(L'pool), Kaduna, Northern Nigeria.

increase of 20 per cent in the scale of architects' fees for state-aided housing schemes. Negotiations are to continue in regard to an adjustment of the number of different designs to be required in relation to the number of houses in a commission and also the possibility of some further adjustment in fees for commissions involving less than 100 houses.

**8. R.I.B.A. Dinner 1956.** It was agreed that it would not be practicable to hold a Reception at the R.I.B.A. during 1956 as the rebuilding programme for No. 68 Portland Place would seriously affect cloakroom and other facilities. It was therefore decided to hold a dinner. The date and place are yet to be settled.

**9. Bequest by the late Cyril Farey [F].** The Council received a water colour of the Maisons Lafitte by the late Mr. Cyril Farey [F] which he had bequeathed to the Royal Institute.

**10. Membership.** The following members were elected: as Fellows 14, as Associates 114, as Licentiates 6.

**11. Students.** 91 Probationers were elected as Students.

**12. Applications for Election.** Applications for election were approved as follows: *Election 6 December 1955:* as Honorary Corresponding Members 2, as Fellows 41, as Associates 53. *Election 7 February 1956 (Overseas Candidates):* as Fellows 7, as Associates 16.

**13. Applications for Reinstatement.** The following applications were approved: as Associates: Kevin Graham, Sydney Constantin Halbritter. As Licentiates: James Edgar Adamson, David McDonald, George William Manning.

**14. Resignations.** The following resignations were accepted with regret: William Robert Davidge [F], Henry Paul [F], Mrs. Elizabeth Cowin [A], Michael Gunther Straus [A], Miss Margaret Pauline Tallet [A], Hedley Theodore Dunham [L].

**15. Applications for Transfer to Retired Members' Class under Bye-law 15.** The following applications were approved: as Retired Fellow: Andrew Lawrence Noel Russell; as retired Associate: Robert James Morrison; as Retired Licentiates: Mrs. Ella Briggs, Samuel Edwin Duncan, Albert Morgan, John Egerton Thorpe.

**16. Obituary.** The Secretary reported with regret the death of the following members: Edward Thurlow Leeds, M.A., F.S.A. [Hon. A], Fiske Kimball [HCM], Ernest Victor Beer [F], Frederic Glynn Gilling [F], William Hansell Hayward [F], Hume Victor Kerr [F], Stuart Cameron Kirby [F], Charles William Long [F], Henry Martin Luyken [F], Leonard Pickford [F], John Alistair Ross [F], Ernest Tellwright Watkin [F], Michael Melvill Fenton Wingate [F], Samuel Bridgman Russell [Retd. F], Theophilus Bradford Ball [A], Melville Crum Brown [A], Edward Gerard Buck [A], Harvey Spivey Davison [A], Benjamin Donaldson [A], William Taylor Loveday [A], Samuel Reginald Maisey [A], Kenneth William Matheson [A], Spencer Harris Joseph Murch [A], Alfred Lloyd Frank Pegg [A], Hubert Savage [A], Percy Scott-Williams [A], James Hugh Tranter [A], Thomas J. Bee [Retd. A], Alfred James Peyto [Retd. A], Victor George Santo [Retd. A], Edward George Kingston [L], Sidney Thomas Pyle [L], Alexander Forbes Simpson [L], Leslie Fred Smith [L], Denny Watney [L], Walter Clement Barker [Retd. L].

## Notes from the Minutes of the Council

### MEETING HELD 11 OCTOBER 1955

#### 1. Appointment of R.I.B.A. Representatives.

(a) *Council of the British School at Rome:* R. E. Enthoven [F], in succession to Anthony M. Chitty [F]. *Note:* The other representative is P. G. Freeman [F]. (b) *West Midlands Advisory Council for Technical, Commercial and Art Education:* Alan Young [F]. (c) *Regional Advisory Council for Higher Technological Education, London and Home Counties:* J. S. Walkden [F], in succession to Thomas E. Scott [F]. (d) *International Conference on Non-Destructive Testing of Material:* R.I.B.A. Representative to attend Informal Meeting convened by Institute of Physics to discuss Resolution passed at Conference, Professor W. N. Thomas [F]. (e) *Plumbing Trades National Apprenticeship Council:* W. A. Gutteridge [F] for year beginning 1 September 1955—re-appointed. (f) *Federation of Malaya Board of Architects:* V. S. van Langenberg [L], President of the Federation of Malaya Society of Architects, in place of A. O. Colman [L], for three years beginning 1 January 1956. (g) *Croydon Technical College Advisory Committee on Building:* J. Kenneth Hicks [F]. (h) *Institute of Builders: Board of Building Education:* R. E. Enthoven [F], Vice-Chairman of the Board of Architectural Education. (j) *Meeting to Consider Formation of Regional Productivity Committee for London:* Howard V. Lobb [F] and E. D. Mills [F].

#### 2. The Honorary Corresponding Membership.

Letters of acceptance of and thanks for the Council's nomination for election as Honorary Corresponding Members were received from Mr. Clair W. Ditchy, Immediate Past President, and Mr. Edmund R. Purves, Executive Director of the American Institute of Architects.

**3. R.I.B.A. Architecture Bronze Medal: The Northern Architectural Association.** Formal approval was given to the award for the three-year period ended 31 December 1954 made by the jury convened by the Northern Architectural Association in favour of the Design and Research building of Messrs. C. A. Parsons & Co., Heaton Works, Newcastle upon Tyne, designed by S. W. Milburn & Partners (S. W. Milburn [F], D. Foster [A], R. W. Anderson [A] and T. D. Spence).

**4. Record of Past Secretaries R.I.B.A.** Approval was given to a proposal for a permanent record of past Secretaries R.I.B.A. to be carved upon the wall in the entrance hall of the R.I.B.A. building. The following names will be recorded: C. L. Eastlake 1871-1878, W. H. White 1878-1896, W. J. Locke 1897-1907, Sir Ian MacAlister 1908-1943. Prior to 1871 the Royal Institute had no permanent full-time Secretary.

**5. The South Eastern Society of Architects: Formation of Maidstone Chapter.** Approval was given to a proposal by the South Eastern Society of Architects to form a Maidstone Chapter.

**6. Completion of Premises Fund: Donations.** Letters of thanks were sent for the donations to the completion of premises fund: The City and Borough Architects Society £5 5s. Messrs. Leeb, Ritchie-Fallon and Noall [AA], Capetown £2 2s.

**7. Scale of Fees for State-aided Housing Schemes.** The Council approved the report of the R.I.B.A. representatives on their negotiations with the Local Authorities' Associations. Agreement has been reached for an overall

Edward John Conway [Retd. L], John Beaumont Tansley [Retd. L], Albert Barry Stone [Student].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

## MEETING HELD 1 NOVEMBER 1955

**1. Appointments.** *British Standards Institution: Conference to decide upon Preparation of a British Standard for Corrugated Translucent Sheets: R.I.B.A. Representative: F. H. Heaven [A].*

**2. Direct Election to the Fellowship.** On the recommendation of the Royal Australian Institute of Architects, the following were elected to the Fellowship under the provisions of the Supplemental Charter of 1925 Section IV, Clause 4: Wilfred Thomas Haslam, F.R.A.I.A., Past President, South Australian Institute of Architects; Keith Mills Yelland, F.R.A.I.A., Past President, South Australian Institute of Architects; James Musgrave Collin, F.R.A.I.A., Past President, Queensland Chapter, R.A.I.A., and Bertrand Lucien Dechaineux, F.R.A.I.A., Past President, Tasmanian Chapter, R.A.I.A.

**3. Conference on Training in the Building Industry.** Arising from the report of the Joint Committee on Architectural Education, arrangements have been made for a one-day Conference on Training to be held at the R.I.B.A. on 31 January 1956. Detailed arrangements have been left in the hands of the Joint Committee of Architects, Quantity Surveyors and Builders. The Chair will be taken by Mr. Harvey Frost, President of the N.F.B.T.E. The speakers will be Mr. D. H. McMorran [F], Mr. W. James, F.R.I.C.S. and Mr. David Woodbine-Parish for the N.F.B.T.E. Invitations are being sent to a number of the principal organisations interested in the building industry to nominate representatives to attend the Conference.

**4. Amendment to Rules: The Berks, Bucks and Oxon Architectural Association.** Approval

was given to an application by the Berks, Bucks and Oxon Architectural Association for an amendment to their Rule 5A dealing with the procedure for the nomination and election of Officers and Executive Committees of Branches.

**5. Proposed Standard Form of Tender for Nominated Suppliers.** Approval was given to the draft of a proposed form of tender for nominated suppliers which is to be issued as a standard document. The form has already received the approval of the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers.

**6. Membership.** The following members were elected: as Fellows 6; as Associates 14.

**7. Students.** 45 Probationers were elected as Students.

**8. Applications for Election.** Applications for election were approved as follows: *Election 6 March 1956 (Overseas Candidates):* as Fellows 2; as Associates 14.

**9. Applications for Reinstatement.** The following applications were approved: as Associates: Basil Ian Briggs, Ralph Waldo Maitland, Allan Scott Millar [Retd. A], Louis Rigola Volontero, Charles Sydney Whatmore; as Licentiate: Denis Smith.

**10. Applications for Transfer to Retired Members' Class under Bye-law 15.** The following applications were approved: as Retired Fellows: Arthur George Bray, Alfred John Johnson.

**11. Obituary.** The Secretary reported with regret the death of the following members: Sir Richard Arthur Surtees Paget, Bt. [Hon. A], William Illingworth [F], Gilbert Thomas Francis Gardner [Retd. F], Albert Henry Owen [A], James Ambler [L], Sydney Howard [L], Douglas Harold Payne [L].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

while in private practice at Brighton, the Commodore cinema and the Trafalgar Institute for Soldiers and Sailors.

**Albert Barry Stone [Student]** was unhappily killed in a road accident on 25 June. He was 26.

He was educated at Alleyne's Grammar School, Stone, studied at the Wedgwood School of Art and served his articles with Messrs. W. R. Helm [A] of Newcastle, Staffs., after which he remained with the firm and, says Mr. Helm, 'played an important part in carrying out the varied work of that office'.

Mr. Helm adds, 'His quiet, unassuming, courteous manner, sound reasoning ability and good taste marked him out as one who would have upheld the highest ideals of the profession. The profession is the poorer for his passing.'

**Arthur Henry Russell, B.E.M. [L]**, died on 7 June, aged 42.

Mr. Russell practised in London, at Duke Street Hill, London Bridge, building chiefly factories but also offices, houses and church halls. Among the factories built by him are the Ocean Works, Erith. Mr. Russell was an experienced valuer and was often called as an expert witness in law cases. He was awarded the British Empire Medal for his work as Deputy Leader of the Bermondsey Heavy Rescue Service during the war.

**John Brankstone Muir [Retd. L]** died on 4 April 1955, in Pretoria, South Africa.

Mr. Muir trained with J. MacVicar Anderson, President R.I.B.A. 1891-4, and afterwards worked for 25 years with Henry L. Anderson in private practice in Pretoria. In 1929 he entered the service of the South African Government and remained there for another 25 years. Among the long list of his buildings are the post office and telephone exchange in Queenstown.

**William Haydyn Robertson, A.M.T.P.I. [A]**, died in Western Australia in March 1953.

Mr. Robertson graduated from Melbourne University in 1927, and after a few months working in an architect's office in Melbourne came to London, where he spent two years with Sir Aston Webb and Son. Then followed two years in Montreal with John S. Archibald and then travel in Europe and America. After further periods in England he returned to Australia in 1933 and soon joined the Department of the Interior. During the war he was that Department's representative on the State Defence Camouflage Committee and was responsible for all A.R.P. structural works in the State.

In 1946, having for some years done some teaching work, Mr. Robertson inaugurated the School of Architecture at Perth Technical College, retiring from his government service to do this. The School was recognised by the R.A.I.A. in 1950.

Mr. Robertson also assisted in the formation of a West Australian Division of the Australian Town Planning Institute, was Chairman of the Modern Architectural Research Society of Western Australia and served as Hon. Secretary and, later, Council member for the Western Australia Chapter of the R.A.I.A.

**Henry Arthur Crouch, C.I.E. [Retd. F]**, Title Prize man 1896 and former member of Council, died on 18 June, aged 85.

Mr. Michael Tapper, M.C., F.S.A. [F] has supplied us with the following appreciation and account of Mr. Crouch's career:

'Mr. Crouch's early life was spent in Brisbane, Queensland. He was articled to Alfred Banks and studied architecture at the Queensland

# Obituaries

**Ernest Budge Glanfield [F]** died on 1 May, aged 70.

Mr. Glanfield was articled to Mr. Horace Field [F] and practised throughout his career in London. His principal architectural works comprised the restoration at Hexham Abbey, Northumberland, Neasden Methodist Church, the North-Western Polytechnic in Kentish Town, the Corner House, Portsmouth, a number of inns, Quality Inn restaurants, the first Gaumont-British film studios at Lime Grove, Shepherd's Bush, several factories and private housing estates.

After a short period of partnership with Moscrop Young Mr. Glanfield practised for 11 years with W. E. Riley; in 1950 he was joined by his son Mr. J. R. Glanfield [A] and Mr. E. R. Corby, M.C. [A], who now carry on the practice.

Apart from architecture Mr. Glanfield's main interest was in church music. He was an organist all his life and a choir master for much of it.

**Charles Ernest Stafford [Retd. A]** died on 2 April, aged 79.

Mr. Stafford was articled to Mr. Maurice Hunter, A.M.I.C.E., Civil Engineer and Surveyor, Belper, Derbyshire, and spent his career in local authority service. From 1900

to 1904 he was Chief Architectural Assistant to the City Surveyor, Carlisle, and from 1904 to 1929 he held the same position with the Borough Surveyor, Derby. From 1929 to 1945 he was Chief Assistant to Mr. C. H. Aslin, C.B.E., President R.I.B.A., when he was Borough Architect for Derby. Mr. Stafford became an Associate R.I.B.A. in 1914.

In his Carlisle post Mr. Stafford worked principally on the building of markets, on street widening and improvements, on a sewage disposal scheme and on a survey of the city and the preparation of Parliamentary plans for an extension of the city's boundaries. At Derby he was largely responsible for the building of the extension to the Derby power station and for the planning of the public baths, also for tram sheds, hospital extensions and housing schemes.

**Adrien Jouvin Sharp [Retd. F]**, died on 15 June.

Mr. Sharp was in private practice from 1910 to 1920, then became architect to the Portsmouth Education Committee, and from 1935 to 1948 was Portsmouth's first City Architect. On his retirement he was elected the first honorary member of the City and Borough Architects Society.

The many schools designed by him included the Northern Grammar School, Portsdown, Langstone and Court Lane, all of Portsmouth. He also designed the First-Aid and Decontamination Centre, Portsmouth, the prototype for many others throughout the country; and,



Institute of Architecture, being Gold Medallist in 1891. He came to London in 1892, and was elected Associate of the R.I.B.A. in 1893 and Fellow in 1909. In 1896 he won the Tite Prize. He began private practice in 1904 and won the competitions for Malvern, Hackney and Worthing public libraries.

In 1909 he was appointed Consulting Architect to the Government of Bengal, a position he held until he resigned in 1926. It was in India that the major part of his life's work was done. Among many works, he designed and supervised the erection of the North British Mercantile Insurance Company's offices in Calcutta, the Hongkong and Shanghai Bank, the School of Tropical Medicine and Hospital for Tropical Diseases, Calcutta, the Central Telegraph Office, the Headquarters building and barracks for the Calcutta Police. It is difficult to mention all the buildings he designed, so great was his output.

He was also Consulting Architect to the Royal Calcutta Turf Club and was invited by the Rangoon Turf Club to advise on their race course, etc. there. He officiated for a time as Consulting Architect to the Government of India, was a Fellow of Calcutta University and a Trustee of the Indian Museum.

He was a fine draughtsman, and a more than competent water-colourist, with a love for fine works of art.

Upon his retirement he was made a Companion of the Indian Empire.

He had been in retirement for a number of years, but those of his friends with whom he was in touch will miss his genial and kindly spirit.

**Harvey Spivey Davison** [A] died on 5 July at the early age of 45.

Mr. Davison studied at Leeds School of Architecture and began private practice in 1937. After a time he joined with Mr. R. S. Shapley [F] in the practice of Shapley and Davison.

The principal buildings with which Mr. Davison was concerned are the Swinton Fitzwilliam Infants' School for the West Riding County Council, a science block and gymnasium for Hemsworth Grammar School, a factory in Leeds for John Thompson (Triumph Stoker) Ltd. and the rebuilding of Headingley cricket ground pavilion. In 1938 Mr. Davison was awarded first premium in the competition, limited to members of the West Yorkshire Society of Architects, for Council Offices at Adwick-le-Street. The project was unfortunately abandoned.

Mr. Davison was Hon. Secretary of the West Yorkshire Society from 1946 to 1950 and a member of its Council 1945-55.

The practice will be carried on by Mr. Shapley still under the name of Shapley and Davison.

**Walter Clement Barker** [Retd. L] died on 10 April 1954, aged 74.

Educated at Halifax New School, Mr. Barker was a brilliant student coming first in all England in Latin and arithmetic in the Cambridge Local Examinations. After serving his articles with a Leeds firm of architects he was for a time on the staff of the Halifax Corporation. In the early 1920's he became a partner in the firm of Sutcliffe and Sutcliffe, practising at Hebden Bridge, Yorkshire.

He was responsible for, among other buildings in the district, a new school for Birchcliffe Baptist Church, a new church (St. John's) and extensions to Scout Road Methodist School, Mytholmroyd. During the Second World War he was on the staff of Hepton Rural District Council and was responsible for the drawing up of the plans for the Council's first post-war

housing programmes at West Laithe, Heptonstall, and in the Old Town district. He retired in 1948. In the First World War Mr. Barker served in the Royal Garrison Artillery.

He was a member of Hebden Bridge Urban District Council from 1927 to 1930 and had a long association with the Hebden Bridge Literary and Scientific Society.

**Thomas James Bee** [Retd. A] died on 23 July, aged 79. Mr. Bee was Donaldson Medallist 1893-4.

He studied at the A.A. School of Architecture and was articled to Messrs. Gordon Lowther and Gunton, of Finsbury Circus. He was responsible in a private capacity for premises for the Midland Bank Ltd., private houses in Kent, Surrey and Sussex, and alterations to the Rock Hotel, Cornwall, and to Sidcup Place for Chislehurst Borough Council. He was also for a time architect on the staffs of the London County Council and Woolwich Borough Council.

During the 1914-1918 war he served in the Royal Naval Air Service and during the last war with the Heavy Rescue Service at Eltham.

**John Simpson Bowie** [Retd. L] died on 14 February, aged 76.

Mr. Bowie trained in Edinburgh but practised in the Transvaal, where he was responsible for the Transvaal Provincial Home, the town hall at Springs and for the Witwatersrand Technical Colleges at Benoni, Springs and Brakpan.

**Joseph Alexander Henderson** [A] died on 6 June at the early age of 39.

Mr. Henderson had been since 1946 chief assistant to Mr. Arthur H. Russell [L]. Mr. Henderson, who studied at the Brixton School of Building, was elected Associate in 1948. From 1940 to 1946 he served in the 29th Survey Company of the Royal Engineers.

**James Hugh Tranter** [A] died on 1 August, aged only 38.

Mr. Tranter trained with Messrs. Godman and Kay, of Horsham, Surrey, and worked with several firms of architects in the U.S.A. and with the Pembroke and Essex County Councils. With the Essex County Council he was engaged chiefly upon schools at Ilford.

**Samuel Bridgman Russell** [Retd. F] died on 2 August, a week before his ninetieth birthday.

Mr. Russell was educated privately and was a student and prizewinner at the R.A. Schools. He started his own private practice at an early age and was responsible for two Passmore Edwards public libraries at Plaistow and Bow and a cottage hospital at Bromley, Kent. In about 1888 he joined with the late J. S. Gibson in the partnership of Gibson and Russell and carried out among other works an L.C.C. hostel, West Riding County Hall, West Ham Technical Institute and Library and the West Riding Museum—all won in competitions. In the early 1900's he entered into partnership with T. Edwin Cooper, with whom he also won a number of competitions, including Hull Town Hall and Law Courts, the Royal Grammar School, Newcastle upon Tyne, the Girls' Grammar School, Saltburn, Middlesbrough Public Library, Rochester Technical Institute, Burslem Public Buildings and Watford Boys' Grammar School. The firm's entry for London's County Hall reached the final stage.

The partnership with Mr. (later Sir Edwin) Cooper was dissolved in 1912. Mr. Russell then practised alone, except for a period immediately before his retirement when his son

joined him. From 1912 onwards Mr. Russell built the Brighton, Hove and Sussex Boys' Grammar School and the Dalziel High School, Motherwell, both won in competitions, and a number of country houses and business premises. He was for a few years Chief Architect in the Ministry of Health. He retired from practice in 1939.

Mr. Russell took an active part in the local government of Hitchin, Herts., being at one time Chairman of the R.D.C. He was also a J.P. He was a Freemason and was in 1910 Worshipful Master of the Cecil Lodge, Hitchin.

Mr. R. T. Russell, C.I.E., D.S.O., M.T.P.I. [F] says of his father: 'He excelled in planning and his rapid solution of difficult problems made them appear simple and straightforward. He was a fine constructionalist but his profession was by no means his only interest; he had a mechanical bent and possibly would have been as successful an engineer as an architect. He had taken out patents for designs of an internal combustion engine and a steam turbine at about the same time as the Parsons' turbine was invented.' Among his friends in the early days were E. A. Rickards, C. E. Mallows and S. K. Greenslade.

Mr. Russell was a former member of Council.

## Members' Column

*This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted; office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.*

### APPOINTMENTS

**Mr. L. H. Hammond** [A] is now staff architect to Messrs. Selleck Nicholls & Co. Ltd., St. Austell, Cornwall, and will be pleased to receive trade catalogues at that address.

**Mr. W. Theodor Jackson**, M.B.E., A.M.T.P.I. [A], Director of Maintenance Services, Ministry of Works, has been seconded to the Iranian government as a technical adviser to the Plan Organisation as from December 1955. His address for the next two years will be c/o Plan Organisation, Khiaban Daneshkadeh, Teheran, Iran.

**Mr. R. Latté** [A] has taken up his appointment of Regional Architect, Province of Quebec, to the Central Mortgage and Housing Corporation and will be pleased to receive trade catalogues, etc., at 940 Côte de Liesse Road, Town of Mount Royal (Montreal 16), P.Q., Canada.

**Mr. David E. Percival** [A] has been appointed City Architect of Norwich, and his address is now City Hall, Norwich.

**Mr. J. Robotham** [A] has been appointed Divisional Planning Officer to the Lancashire County Council and his new address is c/o the Divisional Planning Office, 18 Bridgeman Terrace, Wigan.

**Mr. Kenneth Steen**, M.T.P.I. [A], Deputy County Planning Officer, County Council of the West Riding of Yorkshire, has been appointed County Planning Officer, Cumberland County Council.

### PRACTICES AND PARTNERSHIPS

Messrs. Barnes, Challen & Cross [L/F] have acquired the practice of the late Arthur H. Russell of 9 Duke Street Hill, London Bridge, S.E.1. The whole of the business is now transferred to 96 Gloucester Place, London, W.1. in the sole name of Barnes, Challen and Cross.

**Messrs. Lionel Brett, Kenneth Boyd and Peter Bosanquet [F/AA]** are now working in partnership in London and at Watlington. Their London address is 16 Brendon Street, W.1 (PADdington 9309), and their Watlington address is Watlington Park, Oxford (Watlington 140).

**Mr. W. Michael Clifford [A]** has entered into partnership with Mr. Irving D. Boigon, B.Arch., and they are practising from Walnut 1-1001, 321 Davenport Road, Toronto 5, Ontario.

**Mr. Derek J. Hill [A]** has taken into partnership **Mr. Edgar G. Taylor [A]** and the practice will continue at 38 West Street, Fareham, Hants, under the style of **Derek J. Hill and Edgar G. Taylor**.

**Mr. Ho. Kok Hoe [A]** has begun private practice in partnership with Mr. Wee Soo Bee, A.M.I.Struct.E. The style of the firm will be **Ho Kwong Yew & Sons** and the address is 31B North Canal Road, Singapore 1 (Telephone 26331) where they will be pleased to receive trade catalogues, etc.

**Messrs. Illingworth and Son** of Bradford announce that they have taken into partnership **Mr. K. J. Grisdale [A]** and in future the firm will be known as **Illingworth, Son & Grisdale [F/L/A]**.

**Mr. Dennis S. Lichtig [A]** has begun private practice at 'Lola Villa', 24 Sparelease Hill, Loughton, Essex (Loughton 5864), where he will be pleased to receive trade catalogues, etc.

**Mrs. Ruth Lowry [A]** has begun practice at 19 Chlorine Gardens, Belfast, and will be pleased to receive trade catalogues, etc.

**Mr. A. T. Motion [A]** has resigned his appointment with the Corporation of Glasgow Education Department and has begun practice at 17 Woodside Crescent, Glasgow, C.3 (Douglas 0652), where he will be pleased to receive trade catalogues, etc.

**Mr. Stanley Newman [A]** and **Mr. David Levinson** have taken into partnership **Mr. Mark Fenton [A]**. The practice will continue at 9 Mansfield Street, Portland Place, London, W.1, under the existing name of **Newman, Levinson & Partners**.

**Captain C. G. Rose [L]** has taken into partnership **Mr. R. A. Mendenhall [A]** and the practice will continue as **Rose, Lowe and Partners** at 177 Lee High Road, Lewisham, London, S.E.13, where they will be pleased to receive trade catalogues, etc.

**Mr. Ernest Simister [F]** has entered into partnership with **Mr. John Sutcliffe [A]**. The firm is practising under the name of **Simister & Sutcliffe** at York Chambers, Yorkshire Street, Oldham (Tel. Main (Oldham) 4324). Trade catalogues will be welcome.

On the retirement of **Mr. Frank H. Walker [F]** his practice has been taken over by **Mr. Gordon Stables [A]** who will continue to practise under the style of **Walker, Carter & Walker** from the same address—Institute Buildings, Windermere, Westmorland.

**Mr. R. G. Thomson [A]** has become an Associate of the firm Gaby Schreiber & Associates of 7 Hobart Place, London, S.W.1, and his private address is now 7 Sandpits Road, Petersham, Surrey.

#### CHANGES OF ADDRESS

**Mr. T. Andrzejaczek [A]** has joined the staff of the firm of Stephenson and Turner and his address is now c/o Messrs. Stephenson and Turner, P.O. Box 27, Woodville, Adelaide, South Australia.

**Mr. J. D. Atkinson [A]** has changed his address to 410 Alliance House, 48 St. George's Street, Cape Town.

**Mr. Arthur T. Beer [A]** has moved his office to Victoria Chambers, Bridge Street, Newport, Mon. (Telephone (Business) Newport 63325, (private) 72316).

**Messrs. C. A. Bransgrove & Partner [AA]** of Dar es Salaam, Tanganyika and Kampala, Uganda, have opened an office in Empire Building, P.O. Box 61, Mwanza, Tanganyika, where they will be pleased to receive trade catalogues.

**Sir Hugh Casson [F]** and **Mr. Neville Conder [A]** have moved to 55 Thurloe Place, S.W.7 (KNightsbridge 4581).

**Mr. J. G. Coppock [A]** has changed his private address to 115 Garden Village, Co. Antrim, N. Ireland.

**Mr. William Evans [F]** has given up his office at 5 High Street, Romford, and his office address is now 7 Nemes Road, Hornchurch, Essex (Hornchurch 82).

**Mr. Fred Harriid [F]** has changed his address to 84 High Street, Kensington, W.8 (WESTern 4929).

**The Architecture Department of the School of Art, Huddersfield Technical College**, is now accommodated in new buildings at Longroyd Bridge, where the lecturer in charge, **Mr. Jeffrey Walton [A]**, will be pleased to receive manufacturers' trade catalogues and samples, particularly those suitable for inclusion in a 'samples museum'.

**Mr. Robert B. Jackson [A]** has now moved from Denmark to Apotekhuset, Djurgårdsbrunn, Stockholm, Sweden.

**Mr. A. W. Jardine [A]** has moved to 1 Kingsdown Road, Epsom, Surrey.

**Mr. John O'Rourke [A]** has moved to 28 Pine View Road, Ipswich, Suffolk.

**Mr. Norman Roberts [A]** has moved from the Borough Architect's Department, Northampton, to 35 Elsenham Crescent, Basildon, Essex.

We regret that in the September JOURNAL the new address of **Mr. H. Werner Rosenthal** was given incorrectly. His address is 34 Hanway Street, Oxford Street, London, W.1 (LANgham 5774).

**Mr. Geoffrey A. Rowe [A]** has moved to Little Breton, Kirkburton, Nr. Huddersfield (Kirkburton 370). He continues to practise with Messrs. Abbey & Hanson at 11 Cloth Hall Street, Huddersfield, and 11 Wyle Cop, Shrewsbury.

**Mr. R. Sergeant [A]** has changed his address to 183 Penkhull New Road, Penkhull, Stoke-on-Trent.

**Mr. Sven M. Sternfeldt [L]**, architect to Pilkington Bros., Ltd., has moved his office to 29/30 St. James's Street (4th floor rear suite), S.W.1 (WHItchall 6002).

#### PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Associate (30) with varied experience seeks partnership or position leading thereto. Some capital available. Box 67, c/o Secretary, R.I.B.A.

Architects in provincial practice with London connections wish to purchase small established practice in Central London area or east or north-east suburbs. Box 81, c/o Secretary, R.I.B.A.

Associate, A.M.T.P.I. (42), seeks partnership or position leading thereto in established practice, preferably in Yorkshire or the north Midlands. Wide experience in varied work, including domestic, industrial, educational and town planning. Some capital available. Box 87, c/o Secretary, R.I.B.A.

Member requires partnership or position leading thereto with established architect in the Manchester or north-west area of Lancashire. Capital available and considerable experience in the design and supervision of all types of building work. Box 90, c/o Secretary, R.I.B.A.

Fellow wishes to purchase practice or interest as partner in established practice in Cumberland (west coast preferred). Box 93, c/o Secretary, R.I.B.A.

Associate, 34, seeks partnership or position leading thereto in or near London. Varied general experience in London and Edinburgh, in particular university work, research laboratories and commercial buildings. Some capital available. Box 95, c/o Secretary, R.I.B.A.

Associate, 10 years' wide experience with leading architects and authorities, requires partnership with established architect in Midland counties. Some capital available. Box 96, c/o Secretary, R.I.B.A.

Associate (36), university graduate, seeks partnership or situation of responsibility carrying prospects of partnership. Nine years' continuous post-war experience in development corporation and in private practice as senior assistant and principal. Car owner. Some capital available. Would consider eventual purchase of suitable small practice. Box 94, c/o Secretary, R.I.B.A.

#### WANTED AND FOR SALE

Wanted, second-hand plan chests. Please state size and price required. Box 88, c/o Secretary, R.I.B.A.

For sale, Wren Society, Volume IX. Wanted very badly, Volumes XIX and XX. Box 91, c/o Secretary, R.I.B.A.

For sale, ARCHITECTURAL REVIEW, unbound, perfect, 12 vols., 106 to 117, 1949 to 1955 inclusive, and numbers to date. Box 92, c/o Secretary, R.I.B.A.

#### ACCOMMODATION

Member has drawing office accommodation available in Seymour Street, London, W.1, up to 250 sq. ft. Box 89, c/o Secretary, R.I.B.A.

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